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DECEMBER 27, 1947

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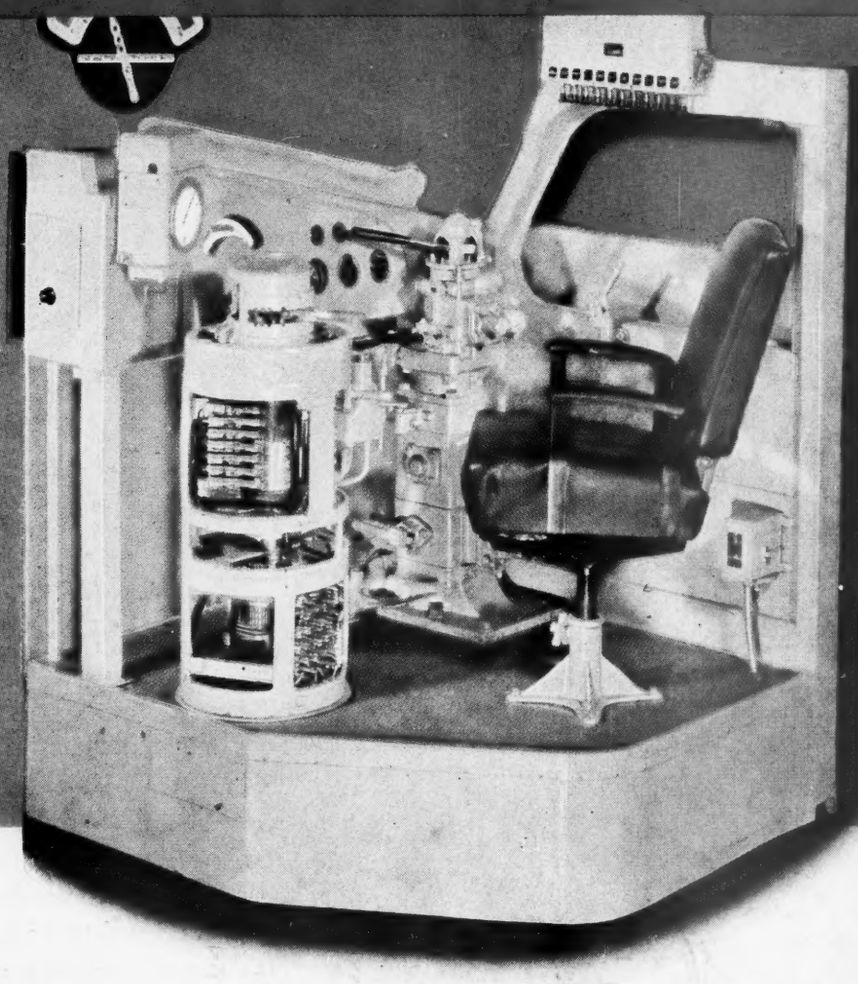

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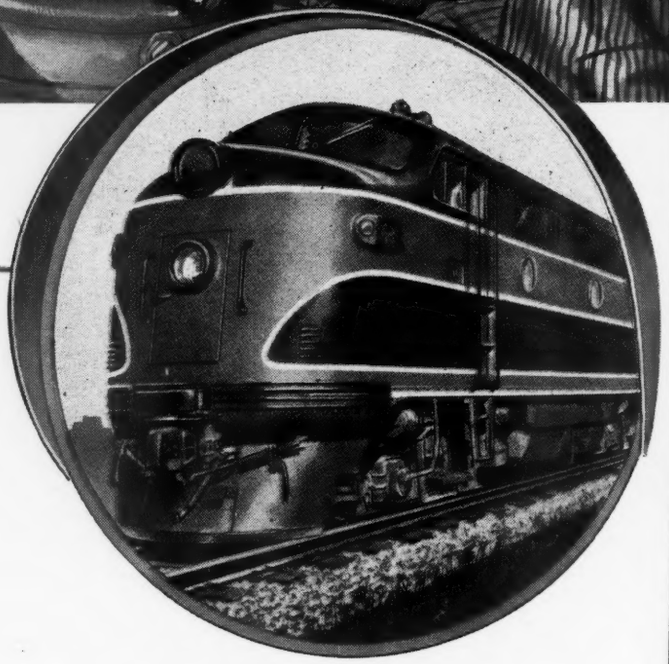

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The Week at a Glance

"CITY OF KANSAS CITY": One of our illustrated articles describes car by car the design, decoration, and mechanical and electrical equipment of the Wabash's new streamliner, recently placed in fast daily round-trip service between St. Louis and Kansas City. This train of seven cars, two of which are for head-end business, has 205 revenue seats and a dining car in which 40 persons can be served at a sitting. There is also a snack bar in the coffee shop-coach.

●

STRUCTURAL DETAILS: The construction of these American Car & Foundry cars of this new train is characterized by a considerable use of aluminum. Sides, roofs, and skirts are of aluminum sheathing, and fluted aluminum molding is applied in strips above and below the windows. The framing is of low-alloy high-strength steel, except the center sills and main end posts, which are of open hearth steel. Lighting in the coaches is incandescent, with a separate reading light for each seat, while the observation-parlor car has fluorescent lighting. The roller-bearing trucks have hot-box alarms and Decelostats.

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LETHAL TO LONG HAULS: The Federal Trade Commission's anti-"cross-hauling" policy was discussed in last week's issue by Leon Leighton, the second part of whose article appears this week on page 36. What that commission means by cross-hauling, and what it seeks to do away with, it appears, is any transportation of a commodity to a point which is closer to the plant of another producer of that commodity. The obvious results of anything like a general application of this principle to American industry would be a complete revolution in the national economy, with the railroads among the first victims, as the immediate effect of such a ban on "cross-hauling" apparently would be the loss of a very large part of their long-haul freight business. Our contributor contends that the ultimate effect of this F.T.C. policy, which is now under going Supreme Court review, would be destruction of democracy by bureaucratic usurpation of the functions of government.

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KENDALL ENCOURAGED: The current slump in carloadings is merely a holiday breathing-spell, and extremely heavy demands for box cars for grain loading and for open-tops for coal loading are expected early in the new year by Car Service Division Chairman Kendall, whose latest review of the national transportation situation is the subject of a news story herein. Nevertheless, there is much in the present freight car situation to be optimistic about. There was a net gain in November of 2,896 cars, that being the extent to which deliveries of new cars exceeded retirements of old ones. The supply of steel for car construction and repair promises to be better early next year. Detention of cars beyond free time was down to 14.6 per cent last month, the lowest figure for two years. The let-up of seasonal traffic in ore, sand and other commodities is making more cars available for coal. And the export freight movement, especially of coal and grain, continues at a phenomenal rate.

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DUTY TO DISTURB: The railroads' managements have an exceptional responsibility in these troubled times, our leading editorial observes. There is a war going on, and the fact that it is not a shooting war—at present—does not make defeat any less dangerous, or its possibility any less grave. The war is between the system of state control *of* its individual citizens, on the one hand, and the system of state control *by* its individual citizens, on the other. The railroads' lot is that of front-line defenders of the system of free choice, free will and free expression, and their conspicuous position attracts the attacks of all those who openly or surreptitiously favor communization of enterprise, while their support must come from those who believe in the American social and economic system but, in most cases, lack appreciation of the dangers threatening it. It is the railroads' job to sound the warning and arouse more defenders of those cherished and successful institutions. In this they could profitably begin with their own employees, whose full cooperation, if enlisted, would be a defensive weapon of incalculable importance.

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DATA ON SPENDING: The Class I roads' gross capital expenditures in the first quarter of 1948 will be about $320 million, according to the estimates of the Interstate Commerce Commission's statisticians which are detailed in the latest "Monthly Comment." This outlay, of which some 80 per cent is expected to be for equipment, compares with $154 million spent last year in the same period, of which 66 per cent was for equipment. Capital expenditures in 1947 are estimated by the statistics bureau at $889 million, an increase of 62 per cent over 1946. This year's outlays would have been larger, it was indicated, if equipment deliveries had been up to expectations. An article on page 38 outlines the "Comment's" analysis of these figures and reports other significant data which the bureau has developed.

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BUILDING RAILROADS: Construction of new lines to link up existing but disconnected railroads, and rebuilding present lines to higher standards are projects in which almost every country in South America is engaged, according to the article on railroad developments in that continent, Part II of which appears in this issue on page 47. Progress in extending the railway network is not likely to be very rapid, it is indicated, because of unfavorable topography, a shortage of funds to finance the work, and a predilection for spending what funds are available for highways and airports instead of railroads. Nevertheless substantial equipment orders and important construction projects are definitely going forward.

FARICY'S FORECAST: A review of the railroads' 1947 and a summation of their outlook for 1948 are the subject of a year-end statement by President Faricy of the Association of American Railroads which forms one of the articles in this issue. When the commission reaches a decision on the Ex Parte 166 rate-increase application the railroads hope that their rates and costs will be restored to a more normal relationship. While it is now estimated that freight traffic will be 2.6 per cent under 1947, and passenger traffic 12.8 per cent less, the railroads' capacity unquestionably will be taxed in 1948 if industrial production does not slacken, and the financial returns should be greater.

●

CANYON CROSSING: Out in Arizona the Santa Fe's main line trains are now able to cross Canyon Diablo without slowing down, and double-track operation is no longer subjected to the delays inherent in any gauntlet track arrangement. This bottleneck-removal results from the completion of the road's third bridge at that point, one adequate for the heaviest power and trains. A comprehensive description of the new structure and of the technique of its construction forms the illustrated article appearing on page 32 this week.

●

FARE TAX BURDEN: In normal times the 15 per cent tax on passenger fares will have a "repressive effect" on common carrier travel, resulting in greater difficulties for the railroads, which are again, after their wartime respite, showing deficits on passenger operations. These observations gain in significance because they emanate not from railroad sources, but from the United States Treasury. The comments of that government department's research staff on the passenger fare and freight bill taxes are included in a report to Congress, a digest of which appears in this issue's news pages.

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OPPOSED TO CONTROLS: One of our readers presents in this issue (page 54) a cogent argument against the creation of government machinery for correlating railroad rates and wages, or rates with costs of both materials and labor. Management's responsibility and initiative must not be further weakened if the competitive private enterprise system is to endure, he contends, and he goes on to draw an interesting parallel between this possible tie-up of railroad costs and revenues and the so-called price parity system as it is now established in agriculture.

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BUILDERS' BIG JOB: All kinds of figures about the prospects for freight car production can be had for the asking, but there is no doubt that, whatever the differences between them may be, they all signify a big job ahead for the car builders. That is the point made by President Felton of the American Railway Car Institute, whose year-end statement is summarized in the news pages.

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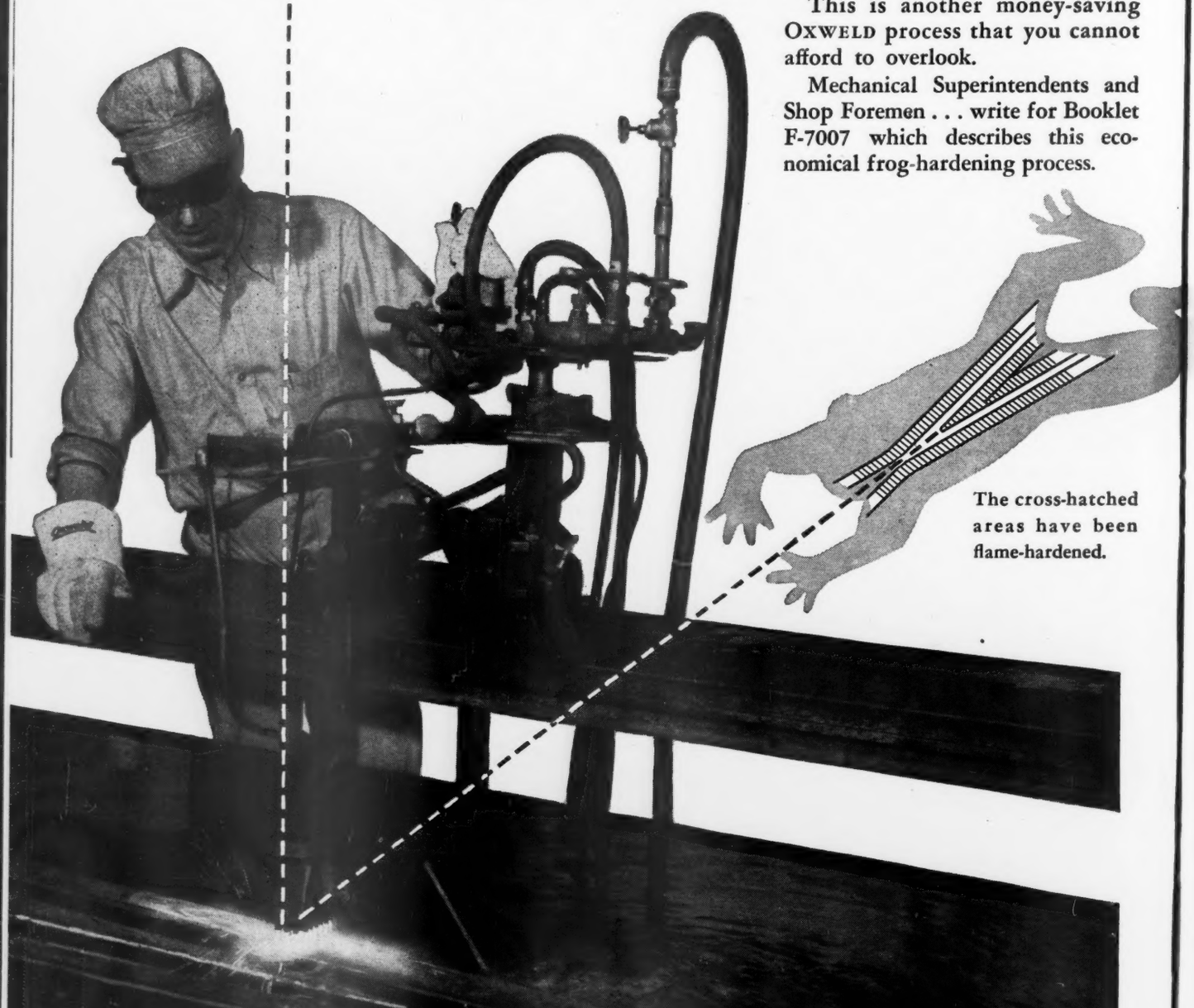
Mechanical Superintendents and Shop Foremen . . . write for Booklet F-7007 which describes this economical frog-hardening process.



The cross-hatched areas have been flame-hardened.

This flame-hardening blowpipe is mounted on a standard OXWELD CM-16 cutting machine.

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SINCE 1912—THE COMPLETE OXY-ACETYLENE SERVICE FOR AMERICAN RAILROADS

RAILWAY AGE

Marching as to War

Those capable of feeling responsibility need to develop this sense to an exaggerated degree if there is to be any hope of dealing adequately with the critical problems of modern times. This opinion was voiced twenty years ago by the Spanish philosopher, Ortega; and the passage of the years has certainly not deprived the observation of its timeliness. It seems particularly applicable to the leadership of the railroad industry as 1947 draws to a close.

Communized Transportation in America

During the past year, battle lines have been sharply drawn for the conflict between the world's two antithetical systems of conducting human affairs—on the one side, that of freedom and personal initiative; on the other, that of coercion, subordinating the individual to the arbitrary power of the oligarchy in control of the state. Even if fortune kindly decrees that the contest shall remain a "cold" one, free people may still suffer defeat unless they have the wisdom and the fortitude to discover and eradicate from their institutions all incipient infection by socialism and coercion.

The railroads form an advanced outpost of the defense of freedom—a position of highest responsibility and extreme peril, of which not all railroad men, themselves, appear fully aware. The industry is hemmed in all around, and practically cut off, by forces which display the banners of individual enterprise, but which are largely supported and directed by the state. Except for the railroads, transportation in America, as far as its fixed plant is concerned, is just as much a communized business as it is in Russia. No steps whatever have been taken (they are rarely even discussed) to require the socialized part of America's transportation to be taxed and financed by charges laid on users—in a manner not only to bolster the solvency of the public treasury, but also to revive incentives to induce private investors to provide for the capital needs of the railroads. Investors cannot have that incentive so long as the railroad industry has to face the unbridled rivalry of the public treasury, as it now does.

If the railroads could manage to dramatize to the public the facts of their position in the vanguard of the defense of economic and political freedom against tyranny, they would not be just doing a favor to themselves and their country, but also to all the wretched millions of political slaves throughout the world. There isn't much chance that this nation, the last-remaining of the great bastions of freedom, will be able to discourage economic servitude elsewhere in the world if it is unable to discern this evil thing right under its nose here at home, and destroy it. There isn't much chance that the nation at large will discover and eradicate this social and economic cancer unless the immediate sufferers—the railroads—are sufficiently disturbed to draw attention to the malady in terms which are generally understandable. There isn't much chance that understanding of these matters will percolate through to the general public as long as not even the employees of the railroads realize what is going on.

A survey of railroad employee opinion, conducted and financed by this paper on its own initiative almost two years ago, showed that employees were just about completely ignorant concerning these vitally important questions. Since that time, some effort has been made to dispel their ignorance—but who knows how successful this effort has been? Periodic opinion research among employees—since both the need for it and an effective method have been clearly demonstrated—would appear to be a proper and desirable project for cooperative railroad effort.

What's Better Than "Planning"?

The railroads know from their contrasting experiences with car control in World Wars I and II that the enlisting of 1,000,000 brains in a cooperative endeavor produces far better results than the high-powered "planning" of a dozen super-intellects centralized in Washington. No matter how bright the dozen men may be, the million will produce better results, if some way can be found to induce them to operate as a team. Indeed, the comparative efficiency of the railroads in the two wars provides a standard demonstration of the relative strength of coercion and free individual enterprise. It should not be overlooked, however, that coercive planning can be *made* to produce

results, after a fashion, even if the collaborators are ignorant or unwilling. On the contrary, a system of voluntary initiative will not function at all without at least some degree of informed initiative. The continuance of the transportation industry under a regime of free enterprise is threatened because such understanding is lacking.

To find and adopt effective means of communicating the information necessary to collaboration, first to employees and then to the general public, is probably the primary problem facing railroad management today. Other industries have a similar problem, but it is less acute for them—because none of them has the public treasury as a belligerent rival to the degree that the railroads have. Dependably successful methods for inducing cooperation by employees have begun to be developed.* New discoveries in this direction would doubtless be forthcoming which would be of great practical value to railroad management, if studies of this kind which have been conducted in other industry were to be extended to the railroads.

Welded Staybolts

One of the advances made in the application of staybolts to the steam locomotive boiler has been the seal welding of the staybolt heads after they have been fastened in the firebox sheets by threading. Seal welding is an effective means of eliminating staybolt leakage, a condition that has an adverse effect on the life of firebox sheets. A logical development of the seal-welded staybolt is one welded completely in place without first having been threaded into the firebox sheets.

The idea of a fusion-welded staybolt has been broached a number of times during the past several years. It has been advocated at the meetings of the Master Boiler Makers' Association by the individual members. At the more recent meetings of that association the discussions of seal welding would invariably cause the question to be raised, "Why do we not dispense with the threaded fastening and weld the staybolts to the sheets?" There is no doubt in the minds of boilermakers about the remarkable progress made in welding or in the strength of the welded structure when the welding is done under established rules that produce the required safety.

At the annual meeting of the American Welding Society last October a paper was presented on a welded locomotive-type boiler for use in the oil fields. The only parts in this boiler not welded were the staybolts and to the many welding engineers present the use of threads for fastening staybolts seemed both unnecessary and unjustified. The speaker, George M. Trefts, vice-president, Farrar & Trefts, indicated that the situation criticised would soon be remedied. As a matter of fact in that same month a committee of the American Society of Mechanical Engineers accepted the welded-stay construction for power boilers.

At the A.S.M.E. annual meeting earlier this month, Fred Huston of the International Nickel Company predicted that eventually all steam locomotive staybolts would be fusion welded instead of threaded—a prediction that undoubtedly will eventually become a reality. Its acceptance for application to the steam locomotive boiler should get every consideration at an early date.

Teaching the Principles of Private Enterprise

In an effort to train young high school students in sound business principles through actual practice, an organization known as Junior Achievement, Inc., has been making rapid progress in the few years in which it has been in existence. Similar in many ways to such organizations as the "4-H Clubs" which educate young people for agricultural pursuits, the Junior Achievement movement seeks to give its members an understanding of the American system of private enterprise. Briefly, under the sponsorship of local committees, composed of representatives of management, labor, education, and civic affairs, miniature business corporations are formed among high school students to produce a product or sell a service. The operation of these corporations is supervised by local committees from business organizations, with the assistance of specially trained executive personnel. These miniature corporations meet one night a week over a period of a year or two, and go through the entire life of a corporate business—from the creation of the original idea to the final liquidation of the business. The members of the corporation determine the service or product, sell stock to finance the company, buy supplies, produce the product, sell it, pay themselves wages and pay dividends to the stockholders.

In most instances, business organizations sponsor these miniature companies and assign representatives to act as advisors. While such miniature organizations obviously cannot engage in railroad work, a number of railroad officers do sponsor Junior Achievement groups. Incidentally, also, boys and girls of railroad parentage are included in these organizations. A railroad executive who has taken an active part in promoting this movement, and encouraging his associates to do likewise, sums it up in these words:

"With all the turmoil in the world today, I think all of us can devote some time toward trying to preach the gospel of our American way of life to those who do not understand just what it is all about, and who are exposed to erroneous information from other sources. I think our best campaign is just one of facts—repeated in different form time after time. Junior Achievement, in my opinion, is a good way to get this message across."

While the church, the school, and other such agencies strive to develop good character and personality, actual training in the duties of American citizenship is not emphasized, and to a large degree seems to be overlooked. This appears to be particularly true of industrial and larger urban districts, with all their distractions. Junior Achievement comes along to meet an obvious need.

* See, for example, the several reports on this subject by the Harvard Graduate School of Business Administration, notably those by Professor Elton Mayo.

1947 Brought the Railroads Record Peacetime Business and Efficiency

By WILLIAM T. FARICY

President, Association of American Railroads

American railroads handled in 1947 the greatest peacetime traffic in history. They did it with an efficiency never before attained. But even so, the rate of return they earned was much less than in earlier years when the volume of business was smaller than in 1947.

Results of 1947 operations point up the two great problems for the year ahead. One is to restore a balance between income and outgo. The other is to secure an increase in car supply. Both are necessary to maintain rail transportation adequate to the nation's needs.

Measured in tons of freight hauled one mile, the traffic of 1947 was 647 billion revenue ton-miles. That was 45 per cent above that of 1929, the record year prior to World War II, and only 12 per cent below the peak of wartime traffic. Measured in revenue freight carloadings, the 1947 traffic was 44,500,000 cars, 6 per cent more than in the previous year and 1.4 per cent above the wartime peak of 1944.

These records were accomplished despite the fact that in 1947 railroads had 535,000 fewer freight cars than in 1929, and 47,385 fewer than at the peak of World War II ownership. They were accomplished through the best utilization of car supply which has ever been achieved.

Return Only 3.32 Per Cent

Despite this record traffic and record efficiency, the 1947 net railway operating income of approximately $750,000,000, before fixed charges, was at an annual rate of return on net investment of only 3.32 per cent. The corresponding figures in 1946 were $620,120,069, and a rate of return of 2.75 per cent.

Railroad wages and payroll taxes have gone up about 75 per cent since 1939. Prices of the materials, supplies and fuel which railroads must buy have gone up more than 90 per cent. But at the end of 1947, and including the interim freight rate increase authorized by the Interstate Commerce Commission in October, railroad freight rates averaged only 28 per cent higher than in 1939, and passenger fares about 20 per cent higher. The gravity of the problem which faces the railroads is obvious.

This disparity between the increases in costs of all sorts and increases in revenues has forced the railroads to seek higher rates. In a petition now pending before the I.C.C., they are asking for increases averaging about 29 per cent, which, if granted, would include the interim increase of about 9 per cent already authorized.

While the demand for freight cars has been steadily increasing, even exceeding that during the war, passenger traffic has declined since the war. In the past year, it amounted to approximately 45 billion passenger-miles, or 53 per cent below the peak attained in 1944, and 31 per cent below 1946.

New Operating Records

Some of the reasons for the unprecedented operating performance of the railroads in handling 1947's freight traffic show up in the new high operating records made in 1947, as follows:

1. Average load of freight per train was 1,148 tons, more even than during the war, and 35 per cent higher than in any previous peacetime year.
2. The average freight train turned out 18,163 net ton-miles of transportation service for each hour it was on the road. This was 71 per cent more than in 1929. The figure is especially significant as it reflects both train load and train speed.
3. Turn-around time for all freight cars in October averaged 12.4 days, half a day better than the previous record established in October, 1946. A reduction of one-half day in turn-around time was equivalent to adding more than 80,000 freight cars daily to the current supply.
4. Turn-around time in October for box cars only was 11.8 days, another all-time record.
5. Average capacity of freight cars was 51.4 tons.
6. Tractive power of steam locomotives averaged 54,523 pounds, an increase of 21.7 per cent since 1929.

Average speed of trains, average movement of serviceable freight cars and locomotives per day, fuel efficiency and many other efficiency factors in 1947 closely approached the record performance of previous years.

Intensive use of equipment, particularly from 1941 to the present time, has resulted in the retirement in recent years of more freight cars than have been installed. Class I railroads and railroad-owned refrigerator car companies installed in 1947 approximately 62,500 new freight cars, compared with 40,377 in the preceding year. It was estimated, however, that the railroads in 1947 retired approximately 70,000 freight cars because of obsolescence and for other reasons. At the end of October, 1947, railroads owned approximately 1,725,357 freight cars compared with 1,772,742 in August, 1945.

Every effort is being made to increase the equipment supply. Railroads and private carlines on December 1 had on order 125,395 new freight cars. Of that number, Class I railroads and railroad-controlled refrigerator car companies had 110,822, the greatest number on order at any time since the spring of 1923. Efforts are being made to obtain a production of 10,000 new freight cars a month, but so far this number has not been realized. The new freight cars which are being installed, are far superior to the ones being retired, both as to capacity and durability, and are capable of rendering much better service to shippers.

Outlook for 1948

Railroad prospects for 1948 necessarily depend to a considerable degree on developments in the national economy. Cost increases have affected railroad earnings to a greater extent than in most industries, because adjustments in railroad rates and fares lag considerably behind changes in unit costs. When the commission's decision in the pending freight rate case is handed down, the railroads hope that their rates and costs will be restored to a more normal relationship to each other.

If cost trends level off in 1948, and if industrial production equals or exceeds that of 1947, the railroads should experience a year of heavy traffic. According to latest railroad estimates, railroad freight traffic in 1948 will be 2.6 per cent below that of 1947, and passenger traffic 12.8 per cent less than in 1947. Additional new cars and locomotives will, when delivered, increase the adequacy and efficiency of railroad performance in 1948. The financial returns from railroad operation, under such conditions, should be greater than those of 1946 and 1947.

With sustained high levels of traffic, with the better service which the future will bring, and with rates adjusted to present-day costs, the railroads will continue to furnish the basic transportation of the nation.

All photographs courtesy Atchison, Topeka & Santa Fe

This view of the new bridge over Canyon Diablo was taken while it was being crossed by a Diesel-drawn eastbound mail-express train

Santa Fe Again Tames Canyon Diablo

Earlier single-track bridge of light design carrying main line across deep gorge in Arizona is replaced with modern double-track structure having a 300-ft. arch span

By C. H. SANDBERG

Assistant Bridge Engineer System
Atchison, Topeka & Santa Fe

TRANSCONTINENTAL trains of the Atchison, Topeka & Santa Fe, which formerly were required to restrict speed when crossing Canyon Diablo in Arizona because of the inadequacy and gauntlet track arrangement of the bridge spanning this chasm, are now speeding over it without pause. The explanation is that a new double-track bridge has been built across the canyon, which is capable of carrying the heaviest equipment at high speeds.

The new bridge is a graceful-appearing structure incorporating a 300-ft. two-hinged arch flanked by a 120-ft. simple deck-truss span at each end. Particular interest is attached to the structure because of a number of special design details, including the provision of an extensive system of walkways, reaching to all important points of the bridge, which permit careful inspections to be made in complete safety. Another aspect of interest is the fact that there was extensive intrusion of grout into the sidewalls of the canyon in the vicinity of the arch footings to insure that adequate support for the structure would be provided.

Third Span at Site

Canyon Diablo (Spanish for Devil Canyon) is a gash 225 ft. deep in the arid table land of northern Arizona, a few miles west of Meteor Crater and between Winslow and Flagstaff. The new bridge has been built to carry the Santa Fe's main line between Chicago and California across the canyon, and is the third to exist at this location. Both of the earlier bridges were of the viaduct type with deck trusses or girders spanning between high steel towers. The first of these was constructed in 1881 and the second in 1900. Both of the earlier bridges were built to carry only one track, but since the Santa Fe's line in this territory is double track, the second structure, the one now replaced, was provided with a gauntlet track arrangement in 1913.

The project to construct a new bridge at this location was undertaken because the existing structure was relatively light in design, necessitating slow orders of 10 m.p.h. over the bridge for some of the heavier steam locomotives. It was also desired to dispense with the gauntlet track arrangement which was proving to be a bottleneck for the heavy traffic carried by this line.

To permit the new bridge to be built in the clear of traffic over the old structure, it was located about 60 ft. north of

the existing bridge, necessitating a short line change to make connection with the existing alinement.

The steel superstructure of the new bridge is designed for double-track, E72 loading. The arch span is 25 ft. deep at the center and 80 ft. 2 in. deep at the haunches. The trusses are spaced on 28-ft. centers. Panel lengths are 30 ft., and the truss system is of the Pratt type.

The foundations for the bridge consist of a concrete abutment at each end and two concrete piers at each of the arch haunches. Each of these piers has a horizontal surface and a sloping surface to conform to the shape of the arch shoes which are designed to transmit vertical loads as well as the diagonal thrust of the main arch. The arch shoes are each 6 ft. wide and 7 ft. 6 in. long at the bottom. At each haunch the load is transmitted to the arch shoe through a pin 16 in. in diameter. At the abutment ends of the 120-ft. spans rocker shoes are provided to permit expansion.

At the arch end of each 120-ft. span the top chords are connected to the upper ends of the vertical posts of the arch by 10-in. pins. For the sake of appearance, erection procedure, and also to add to their lateral stability, the lower chords of the 120-ft. spans are extended downward in a half-arch shape to connections with the arch shoes. However, to permit freedom of movement of these lower chords a slip joint is provided at the first panel point from each arch shoe.

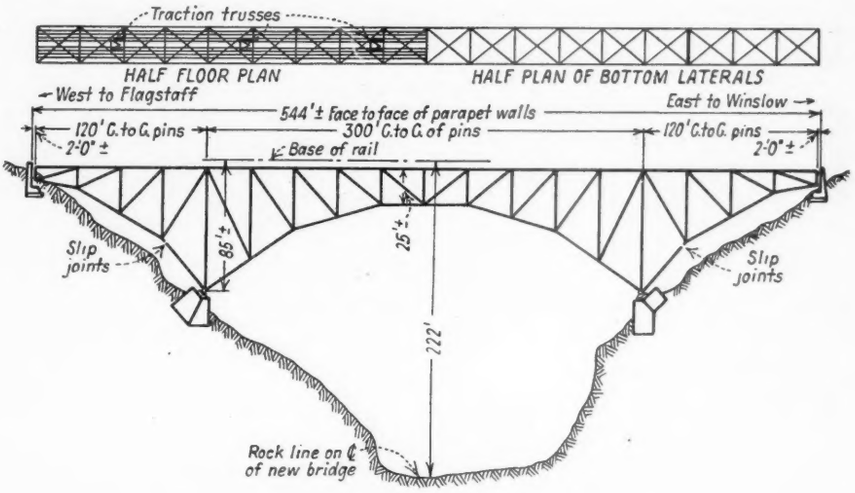
Some Interesting Features

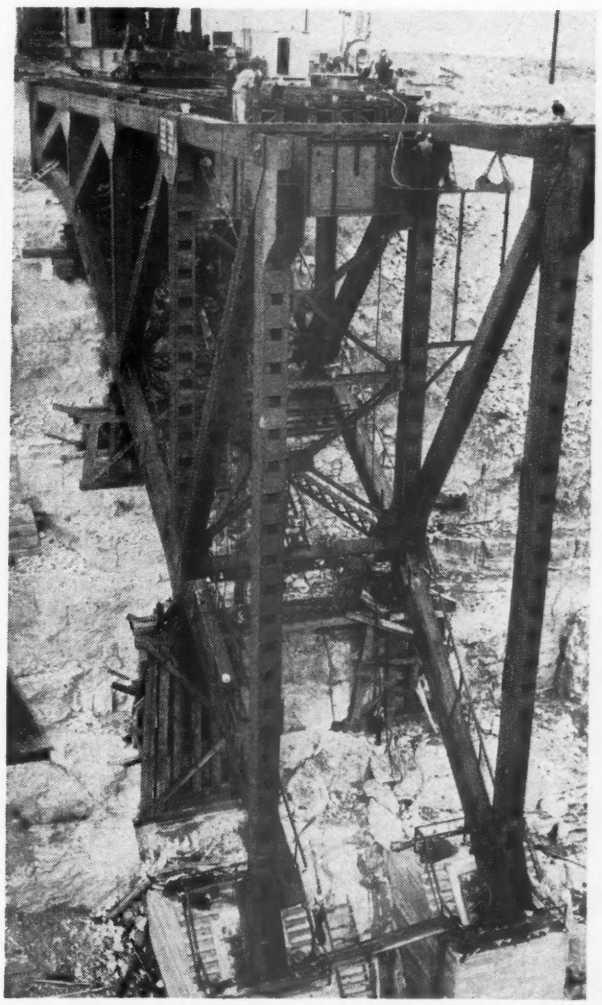
One of the features of the new bridge is the box sections for the main truss members. The four angles incorporated in each of these sections are turned inward so that the members are given a streamlined appearance. In addition, "perforated" plates are used on the bottoms of the chords and the sides of the diagonals, in place of the customary lacing bars. The perforations in these plates, which are elliptical openings 12 in. wide and 20 in. long, spaced on 4-ft. centers, are provided to facilitate the painting and inspection of the interiors of the members.

Another unusual feature of the structure, as stated, is the complete system of walkways that has been provided to facilitate inspection and maintenance. Walkways with handrails extend the full length of the bridge on the center line at the bottom-chord level as well as directly under the deck. Also, at each panel point cross walks extend out to both the top and bottom chords. Handrails are also provided along both sides of all bottom chord members. These handrails were connected to the bottom chords before erection; hence they served as a safety measure and proved extremely helpful during the erection work.

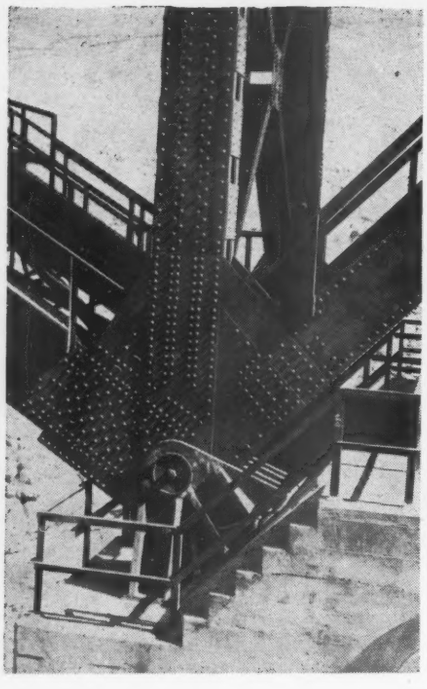
Each track on the bridge is carried on four longitudinal wide-flange beams, 36 in. deep, which are supported on rib bearings at each transverse floorbeam. At every fourth floorbeam a traction truss transmits the braking and traction forces into the top lateral system. These trusses consist of rolled 14-in.-wide flange beam sections and are placed directly under the floor stringers.

The deck is of the solid-floor ballasted type that is standard for bridges on the main line of the Santa Fe. The floor of the deck for each track consists of 6-in. treated timbers, 16 ft. long, with 8 in. of crushed rock ballast under the ties. The deck timbers were made 16 ft. long so that they extend over the top chords and thereby provide protection against





Right — Erecting the 120-ft. simple truss span at the west end. Note falsework bents at panel points. Above —Elevation of the new bridge and half plans of the floor system and the bottom laterals



protective coating of rust inhibitive petrolatum.

Footing Areas Grouted

The sloping walls of the canyon are of solid limestone and hence furnish an ideal foundation for arch construction. However, preliminary investigation disclosed a number of vertical and horizontal cracks in the rock, some relatively large in size, which indicated the need for special measures to assure that a proper bearing for the footings would be provided. These measures included the thorough cleaning of the cracks by water and air, after which they were closed at the surface with Prepakt concrete. Numerous holes 2 in. in diameter were then drilled in the vicinity of the pier areas to intersect any possible cracks underlying the surface. The maximum depth of these holes was 40 ft. A sand-cement grout was then pumped into the cracks that had been closed with Prepakt concrete and also into the drilled holes. A measure of the extensive nature of this work is given by the fact that 5 carloads of sand, 2,900 sacks of cement, 1,400 sacks of filler, and 4,250 lb. of intrusion agent were consumed in grouting the footing areas.

The forms for the concrete piers were anchored to the rock walls of the excavation by Cinch anchors, and reinforcing rods were placed on 2-ft. centers in both directions. All concrete was designed for a compressive strength of 3,000 lb. per sq. in. at 28 days, using an admixture of Pozzolith.

To facilitate the work of setting and adjusting the arch shoes to the correct position and elevation, a recess, 12 in. deep and somewhat larger than the arch shoe, was provided in the horizontal and sloping surfaces of each arch pier. After each arch shoe had been set in exact position with transit and level, the recess was filled with concrete up to the underside of the shoe. Because of the height of the arch piers and the steep slopes on which they are located a steel handrail was placed around the top of each pier as a safety measure.

Erection Procedure

The erection of the bridge was carried out from both ends. The 120-ft. simple spans were first erected on falsework bents placed at the panel points. Each half of the arch was then erected by cantilevering it out from the arch piers. During erection the arch sections were connected to the simple spans, and to prevent uplift of these spans at the abutment ends they were anchored to the concrete of the abutments.

This anchorage was accomplished at each abutment by placing two channels, 40 ft. long, transverse to the center line of the bridge and at a depth of 5 ft. below the bridge seat, where they were encased in the concrete of the abutment. To these channels were connected four vertical anchor rods at each bearing. The upper ends of these anchor rods were fastened to heavy steel slabs placed over the tops of the top chords.

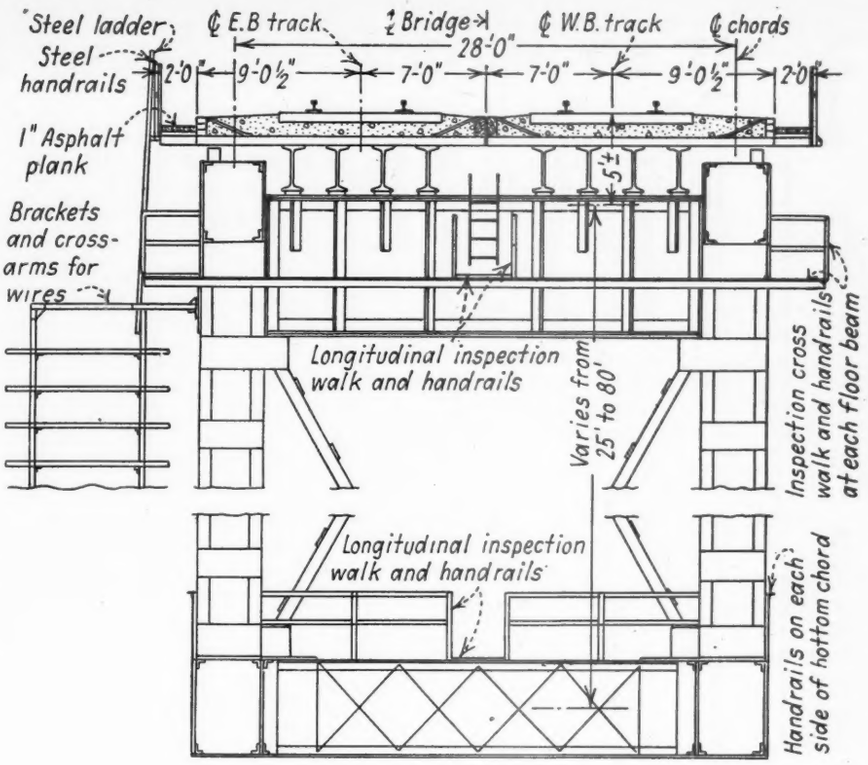
During the erection of the arch, and

Above—Arch shoe and top of pier at one of the arch haunches. Right — The rugged topography of the canyon is shown in this illustration, with the new bridge under construction and the old structure in the background

damage to the steel in case of a derailment. A walkway, 2 ft. wide, with a steel handrail, is provided on each side of the deck. Wearing surfaces of walkways are of asphalt plank with a mopped-on coating of hot asphalt and sand.

Protection from Fire

All other exposed timber surfaces on the deck, such as curbs, are sheathed with galvanized metal to protect them from fire. Before the deck timbers were placed the top flanges of the stringers were covered with a heavy



This typical cross-section through the bridge emphasizes the complete system of walkways that permit safe and ready access to all points of the structure for inspection

until it was closed at the center, the end floorbeam at the abutment of each 120-ft. span was supported on two hydraulic jacks so that, during the closure of the arch at the center, these jacks could be used to tip the outer ends of the arch sections downward as necessary to effect the closure.

While, as stated, the arch is of the two-hinged type under live load, it was designed and erected on the basis of a three-hinged arch under dead load. Accordingly, in the erection, after the dead load, including the deck, the ballast and the track, was in place on each half to within 30 ft. of the center, the arch was closed by riveting in the center members.

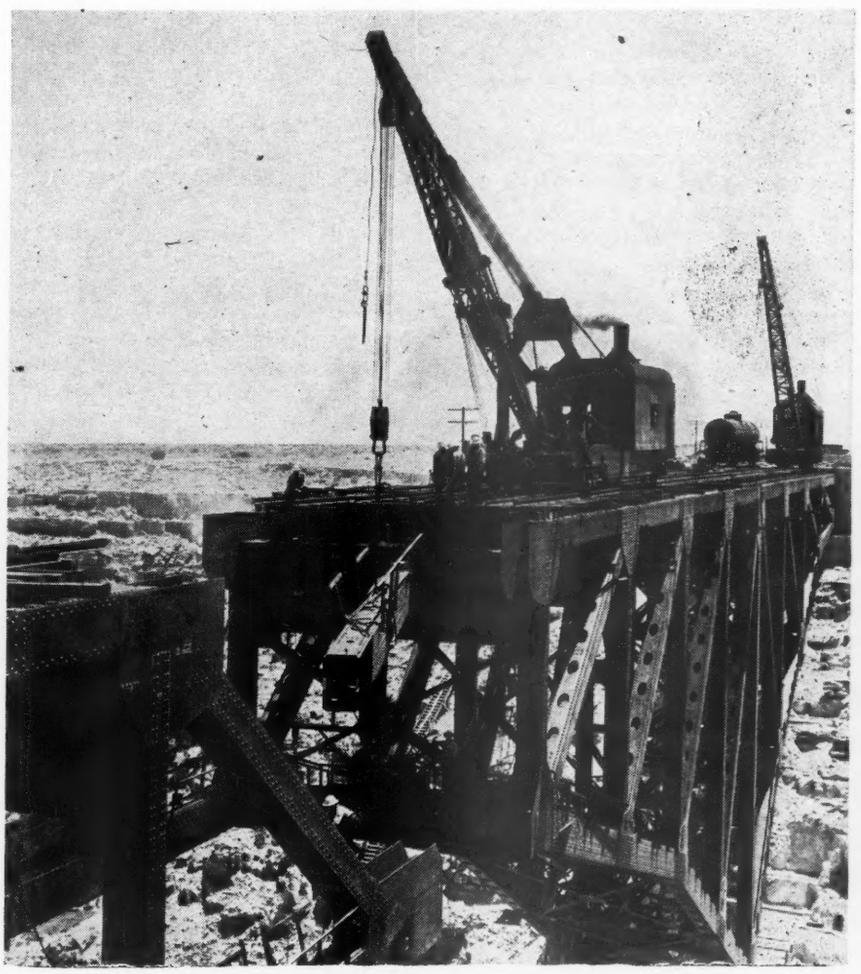
A feature of the erection work was that all heated rivets were transmitted from the heater to the riveting crews through pneumatic tubes. This method of handling the rivets had the effect of expediting all the riveting work, especially at the top and bottom chords where it was possible to deliver the rivets directly to men working inside the members.

Safety Measures Pay Off

Every practical safety precaution was taken during the construction of the bridge to insure the safety of the workers. Nets were employed during the erection of the arch steel. Delivery of the rivets through pneumatic tubes was also a decided safety feature. Due to these and other measures and the vigilance of the contractors the job was completed, including the dismantling of the old structure, without a serious accident.

The rock excavation and construction of the concrete piers and abutments were performed by the Morrison-Knudson Company, while the grouting of the rock in the footing areas was carried out by Intrusion-Prepakt, Inc. The steel was fabricated by the Kansas City Structural Steel Company and was erected by the Kansas City Bridge Company. The painting of the bridge was done by the Omar White Company.

The planning and construction of the bridge was carried out under the general direction of G. W. Harris, chief engineer of the Santa Fe System, M. C. Blanchard, chief engineer of the company's Coast Lines, and R. A. Van Ness, bridge engineer of the system. C. H. Sandberg, assistant bridge engineer system, served as the resident engineer. The new bridge was started in July, 1946, and was opened for traffic in September, 1947.



The arch portion of the new bridge was built outward from both sides of the canyon to join at the center. Here one of the closure members, a length of bottom chord, is being lowered into position by a derrick car operating from the easterly section

Seeks to Wipe Out Long-Haul Traffic

Trade Commission would regionalize production by forbidding absorption of freight charges needed to reach distant markets

PART II

*By LEON LEIGHTON**

[The first part of this two-part article—telling about the Federal Trade Commission's efforts to substitute regionalized production and trade for the country's established nationwide markets—appeared in last week's Railway Age—EDITOR]

THE commission's systematic and inexorable demolition of communities whose principal industries labor under a freight disadvantage in important markets would decimate whole regions. It does not require statistical analysis to show how this would affect the railroads. The railroads serving New England, the South, the West and the Pacific Coast would not survive such devastation of their territory. Even railroads in the concentrated markets and producing areas in the Central Eastern and Great Lakes Regions would be seriously affected. The railroads in Michigan are dependent upon the automobile business. The railroads serving the Pittsburgh - Weirton - Youngstown area would be crippled by destruction of the steel industry there. Every railroad in the country would feel the impact of the commission's edict that transportation into each market be limited to the nearest source of supply, and that transportation from each plant shall be restricted to its own back yard.

The commission argues that "substantial freight absorption leads to economically wasteful cross-hauling," and supports this argument by reference to its Finding 23(c) in the cement case.[18] The finding[19] states that "under the pricing system used by respondents there was much cross-hauling of cement," and that a study made by the Cement Institute "to obtain the probable freight loss due to cross shipments of cement" showed substantial freight losses in 1933.

"Freight Loss"

The study referred to[20] never uses the words "cross hauls" or "cross shipments," but is devoted to ascertaining "freight loss." It says: "In this calculation to establish the probable freight loss, it is assumed the shipments might have been made from the district or plant having the lowest freight rate."

The study of the Cement Institute analyzed all the 1933 shipments terminating in the Eastern District (including the entire state of Illinois, but excluding Michigan). It found the "freight loss" to be approximately 20 per cent of the total freight charges paid to the railroads.[21]

Because the cost of transporting cement is such a large percentage of its sale price, it is not marketed on a national scale; most mills sell the bulk of their output within a maximum radius of 200 to 300 miles. It seems conservative to estimate that a "freight loss" of 20 per cent of 1933 revenues from cement would become a "freight loss" of at least 30 per cent of all the revenues received from manufactures and miscellaneous and from less-carload freight in 1946. These revenues amounted to $3,075 million, so that the 30 per cent "freight loss" would come to $922 million a year—which is the transportation service the Federal Trade Commission has set out to eliminate.

The commission has never adduced any facts to support its theory that these "freight losses" result in a burden on consumers. The writer asserts that such facts cannot be adduced because they do not exist. A manufacturer does not absorb these "freight losses" as a matter of sentiment or caprice; he does it because the added volume obtained by this practice decreases his unit cost of production by more than the amount of the "freight losses." These "freight losses" are not wasteful in any sense of the word; rather they are a desirable ingredient of our system of free enterprise.

The consumers in this country enjoy a standard of living which has not been attained anywhere else in the world. They are better fed, better clothed, and better housed than any other people, and the farmers and workers who produce the goods receive the highest income in the world. Automobiles, refrigerators and similar articles are a commonplace in this country and a rare luxury everywhere else. Enviable standards of quality and value have been built up by the keenest competition in technology as well as in price. All of this has resulted from our system of mass production, and its necessary corollary of competitive *nation-wide distribution* which has been developed by the expenditure of billions of dollars in salesmanship and advertising.

As was said by Senator Vandenberg in the debates on the Robinson-Patman Act:[22]

> **"The automobile industry is necessarily confined to a comparatively few producing units. If it were not thus confined, the American public would not have the advantage it enjoys today of an exceptionally high value at an exceptionally low price, and the country would not be enjoying the reflected benefit of the induced prosperity that has come from that precise formula."**

The Federal Trade Commission has undertaken to abolish this system because it has concluded that we should revert to the commerce of the horse and buggy days.

Locations of Factories

Factories have been established at their present locations because those who risked their money in the enterprise had found what they considered the best place to manufacture their product. Accessibility to raw materials, availability of skilled labor, climatic and other physical conditions, and numerous other factors in addition to proximity to markets, were all evaluated in making such decision. Railroad freight rates were built upon the basis of a fixed arbitrary for terminal charges with a resultant proportionate decrease in charges per mile as the haul increases. This encourages longer hauls in which railroads can operate more economically and can give better service. It has helped industry to give adequate weight to all factors entering into the location of plants, and to avoid being strait-jacketed by the implacable necessity of being close to markets.

The Federal Trade Commission now selects this single factor—proximity to markets—and makes that the inexorable determinant of the right of a plant to continue at its existing location. The fact that the economy of countless communities and of entire states has become completely dependent upon such plants is brushed aside as a matter of minor

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* Mr. Leighton, a member of the New York bar, will be recalled as the author of informative articles on l. c. l. traffic which appeared in the *Railway Age* of May 24 and 31, 1947.

[18] Brief for appellant commission in *Federal Trade Commission* v. *The Cement Institute*, U. S. Sup. Ct. (Oct. Term 1947, Nos. 23-34), p. 127.

[19] *The Cement Institute*, 37 F.T.C. 87, at p. 253.

[20] Commission's Exhibit 971-28.

[21] The details of this computation are too complicated to be included here, but they will be furnished to any reader on request.

[22] 80 Cong. Rec. 6428.

consequence. The very consumers whom the Commission professes to protect will in many cases lose all their purchasing power as the result of the Commission's destruction of the industry or community in which they are employed. Railroads which have been developed to handle long hauls, and which are particularly vulnerable to motor truck competition in the short hauls, will nevertheless be restricted to the latter business by mandate of the Commission.

Prohibiting "Cross-Hauling"

The writer believes that our traditional practice of permitting plants to be established and to remain where the manufacturer thinks it most profitable to do so has served this country well. This practice has resulted in a productive efficiency which enabled us overnight to become the arsenal of the world, and to manufacture the atom bomb. With all the difficulties of reconversion, we are still the first country to get back on its feet and are now looked upon as the hope of the rest of the world. Observation of other countries indicates that our economy will not benefit if industry is located in accordance with a commissar's ukase.

During the war, suggestions were repeatedly made that the Office of Defense Transportation prohibit "cross-hauling." Mr. Eastman steadfastly refused to do this. He had faith in our competitive system of free enterprise and its application on a national scale. And he realized that "zealots, evangelists and the crusaders have their value before an administrative tribunal, but not on it."[23]

Congress has consistently rejected the commission's proposal that each plant be required to quote identical f.o.b. factory prices to all its customers, and that all uniform delivered price systems and all multiple-basing-point price systems be outlawed.

The "uniform delivered price" system, used in the case of many consumer goods having national distribution, has already been described—the same delivered price is established an all markets and every manufacturer must meet that uniform price.

The "multiple-basing-point" price system is used in numerous producers' goods industries in addition to steel and cement—lumber and lumber products, building materials, paper and fertilizers, among others.[24] When this system is properly applied, each mill is a basing point at which an f.o.b. factory price is established. The delivered price paid by purchasers in any market is determined by the lowest combination of factory price plus actual freight; competitors meet that delivered price by absorbing freight to whatever extent is necessary. The buyer does not pay more than the prevailing factory price at the nearest mill, plus freight. He thus gets the full advantage of proximity to a mill, and has the additional opportunity of buying at the same price from more distant producers.

Therein lies the vital distinction between the multiple-basing-point price system and the "single basing point" price system — the discarded "Pittsburgh-Plus" method formerly used in the steel industry. Under that system buyers in every market would have to pay the prevailing factory price plus freight charges from the sole basing point (Pittsburgh), regardless of the actual point of shipment. Therefore the buyers located closer to the Pittsburgh mills always obtained a lower price than buyers in other areas who were equally close to their local mills.

The United States Supreme Court pointed out this distinction when it outlawed the single-basing-point system used in the glucose industry, under which freight was charged from the single basing point (Chicago), even though the product was shipped from Kansas City or from Decatur, Ill. The Court said:[25]

> "The basing point systems involved in [the *Maple Flooring* and *Cement*] cases, were quite unlike that used by petitioners. . . . In the *Cement* case, *supra*,[26] the defendants used a multiple basing point system, with a basing point at or near each point of production. Under this system, any manufacturer, in order to compete in the territory closer freightwise to another, would absorb freight, by adjusting his mill price to make his delivered price as low as that of his competitors. *Under this system the delivered price for any locality was determined by the nearest basing point.*"

The commission complains that at the present time the steel and cement industries do not have a basing point at or near each point of production. In such cases the buyer is denied the benefit of proximity to point of production, since his delivered price includes an item for the unearned or "phantom" freight charges from the more distant basing point. The writer, believing that a pricing practice involving "phantom" freight is prohibited by decisions of the United States Supreme Court in the Glucose cases, defends only the multiple basing point price system as it is described in the foregoing opinion.

The Federal Trade Commission had acquiesced in the decisions of the lower federal courts, to the effect that section 2 of the original Clayton Act did not prohibit either the single-basing-point or the multiple-basing-point price system. "Instead it pressed for clarifying amendments to the act. . . . The Robinson-Patman Act was adopted in response to the commission's recommendation that defects in section 2 be remedied and its prohibition of price discrimination strengthened."[27]

Section 2(a) of the Clayton Act, as amended by the Robinson-Patman Act forbids any seller "to discriminate in price between different purchasers of commodities of like grade and quality," except for "differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery." Section 2(b) of the act provides that nothing shall prevent a seller rebutting a prima-facie case of discrimination under section 2(a) "by showing that his lower price . . . was made in good faith to meet an equally low price of a competitor."

The Supreme Court was careful to point out that it was not holding the multiple-basing-point price system invalid under the Robinson-Patman Act. It said:[28] "We have no occasion to decide whether a basing point system such as that in the *Cement* case is permissible under the Clayton Act, in view of the provisions of §2(b), permitting reductions in price in order to meet a competitor's equally low price." The Court also said:[29] "But it does not follow that respondents may never absorb freight when their factory price plus actual freight is higher than their competitors' price, or that sellers, by so doing, may not maintain a uniform delivered price at all points of delivery, for in that event there is no discrimination in price."

Intention of Congress

The bill as first reported by the House Judiciary Committee, at the request of the Federal Trade Commission, defined "price" as meaning "the amount received by the vendor after deducting actual freight . . . allowed or defrayed by the vendor." In other words, "price would have been defined as "mill net," so that any variation in mill nets received from different customers would be a prohibited price discrimination.

But the House amended the bill by eliminating the proposed definition of price as "mill net" because Representative Patman admitted that his bill could not be passed with that definition in it.[30]

The United States Supreme Court recognized that Congress had expressly rejected the commission's proposal to prohibit all uniform delivered price systems and all multiple basing point price systems. The court reviewed the

[23] From Mr. Eastman's last public address, delivered before the Association of Interstate Commerce Commission Practitioners at Washington, D. C., on February 17, 1944.

[24] Final Report and Recommendations of Temporary National Economic Committee, p. 33.

[25] *Corn Products Co.* v. *Comm'n.*, 324 U. S. 726, at p. 735.

[26] *Cement Manufacturers Assn.* v. *United States*, 268 U. S. 588, 597-9. This case involved a complaint under the Sherman Anti-Trust Act and not under the provisions of the Clayton Act prohibiting discriminations in price. The court held that the former act was not violated by the multiple basing point price system.

[27] *Corn Products Co.* v. *Comm'n.*, 324 U. S. 726, at p. 736.

[28] *Corn Products Co.* v. *Comm'n.*, 324 U. S., at p. 735.

[29] *Trade Comm'n* v. *Staley Co.*, 324 U. S. at p. 757.

[30] 80 Cong. Rec. 7760, 8223-4.

history of the provision defining price as "mill net," and said:[31]

"The practical effect of this provision would have been to require that the price of all commodities sold in interstate commerce be computed on an f.o.b. factory basis, in order to avoid the prohibited discriminations in selling price. It would have prohibited any system of uniform delivered prices, as well as any basing point system of delivered prices. These effects were recognized in the committee's report, and in the debates upon the Robinson-Patman Bill. Indeed, the provision would have prohibited such a multiple basing point system as that in the *Cement* case, *supra*, as well as the present system.

"Such a drastic change in existing pricing systems as would have been effected by the proposed amendment engendered opposition, which finally led to the withdrawal of the provision by the House Committee on the Judiciary. *We think this legislative history indicates only that Congress was unwilling to require f.o.b. factory pricing, and thus to make all uniform delivered price systems and all basing point systems illegal per se.* On the contrary we think that it left the legality of such systems to be determined accordingly as they might be within the reach of section 2(a), as enacted, and its more restricted prohibitions of discriminations in delivered prices."

Commission's Orders

This pronouncement of the highest court in the land means nothing to the Federal Trade Commission. In the cement case, the commission made a "finding of fact"[32] that "the failure of Congress to define price as mill net, on which failure respondents rely, does not avoid the necessity of having some definite concept of price in performing the administrative duty of preventing price discrimination under the statute." Therefore the commission undertook to perform its "administrative duty" by adopting the very concept of price which Congress had repudiated.

It ordered the producers of cement to cease and desist from "discriminating in price between or among their various customers by systematically charging and accepting mill net prices which differ by the amounts necessary to produce delivered costs to purchasers identical with delivered costs available to such purchasers on purchases from other respondents.[33] In another industry it ordered producers to cease and desist from "discriminating among purchasers by quoting or selling rigid steel conduit at prices which systematically differ in terms of mill nets according to the location of purchasers, and which mill nets plus common carrier transportation charges to the respective locations of such purchasers, produce delivered costs identical with those . . . from differently located respondents."[34]

The rejection of the proposed amendment to the Robinson-Patman Bill was not the only expression of the legislative will. At the same session of Congress, Senator Wheeler and Representative Utterbach introduced the "Anti-Basing Point Act,"[35] but this bill was never reported out of committee.

In 1941, the Final Report and Recommendations of the Temporary National Economic Committee, at the direct request of the Federal Trade Commission, recommended that the Congress enact legislation declaring illegal all basing-point systems, "zone pricing systems" and "freight equalization systems."[36] Congress never adopted the recommendation.

In support of its request to the Temporary National Economic Committee, the Federal Trade Commission submitted a brief on the entire subject, in which it said: "No more vitally needed legislation within the scope of the committee's functions can be suggested than that of directly prohibiting the basing point system by congressional mandate."

This statement in the commission's 1940 brief was an unequivocal acknowledgment that the Robinson-Patman Act (enacted in 1936) did not prohibit the basing point system to the full extent desired by the Federal Trade Commission by requiring identical "mill nets." Despite this acknowledgment, and despite the refusal of Congress on two previous occasions to accept the commission's proposal that any variation in "mill nets" should be prohibited, the commission is nevertheless determined to enforce that prohibition.

The United States Circuit Court of Appeals reviewed the entire legislative history, and said, in connection with the "multiple basing point" system used in the cement industry.[37]

"Furthermore, the basing point price system has been in use by industry for almost a half century. There has been and is a marked diversity of opinion among economists, lawmakers and people generally as to whether it is good or bad. Numerous bills have been introduced in Congress seeking to outlaw its use. Countless time has been spent in hearings by congressional committees, before whom it has been assailed and defended. The pages of the Congressional Record bear mute but indisputable proof of the fact that Congress has repeatedly refused to declare its use illegal. There is no occasion to relate this congressional history. It is a matter of common and general knowledge. . . . Notwithstanding this congressional attitude as recognized by the Supreme Court, this court is now urged to hold that the system is illegal per se, and to require that cement be sold on an f.o.b. plant basis.

"In our judgment, the question as to whether the basing point price system should be declared illegal rests clearly within the legislative domain. We know of no criticism so often and so forcibly directed at courts, particularly federal courts, as their propensity for usurping the functions of Congress. *If this pricing system which Congress has over the years steadfastly refused to declare illegal, although vigorously urged to do so, is now to be outlawed by the courts, it will mark the high tide in judicial usurpation.*"

In our generation we have seen democracy destroyed in the two largest countries in continental Europe through usurpation of the functions of representative government by omniscient and self-willed bureaucrats. A similar effort is now being made in our own country.

[31] *Corn Products Co. v. Comm'n.*, 324 U. S. 726, at p. 737 (citations omitted).
[32] Finding 24(e) in *The Cement Institute*, 37 F.T.C. 87, at p. 256.
[33] *The Cement Institute*, 37 F.T.C., 87, at p. 261.
[34] *Rigid Steel Conduit Ass'n.* 38 F.T.C. 534. at pp. 595-6.
[35] 74th Cong., 2d Sess., S. 4055.
[36] Sen. Doc. 35 (77th Cong., 1st Sess.), p. 33.
[37] 157 F. 2d at p. 573.

Plan Large Capital Outlays in 1948's First Quarter

CLASS I railroads expect to make gross capital expenditures of $319,958,000 during 1948's first quarter, according to estimates submitted to the Interstate Commerce Commission's Bureau of Transport Economics and Statistics and summarized in the latest issue of the bureau's "Monthly Comment." This would be an increase of 108 per cent above the actual expenditures of $153,830,000 made during the first quarter of this year.

$889 Million This Year

The latter total however, includes expenditures of seven roads which did not submit estimates for 1948's first quarter. The expenditures projected for the first three months of next year will be divided 80.6 per cent for equipment and 19.4 per cent for road facilities, the amounts being, respectively, $258,017,000 and $61,941,000. Of the $153,830,000 spent in this year's first quarter, $101,442,000 or 65.9 per cent went into equipment and $52,388,000 or 34.1 per cent into road.

Latest reports on this year's capital expenditures indicate that the 12-months total will be $888,860,000, an increase of 62 per cent over the actual 1946 expenditures of $549,898,000. The former includes actual expenditures of $563,123,000 during this year's first nine months and estimated fourth-quarter outlays totaling $325,737,000. Earlier estimates had indicated that the 1947 expenditures would total $944,000,000; and the drop of $55,000,000 to the present estimate, the bureau said, "may be attributable partly to delays in the delivery of equipment."

Of the $888,860,000 now expected to be spent this year, $606,003,000 or 68.2 per cent will be for equipment and $282,857,000 or 31.8 per cent for road. The distribution of the 1946 expenditures was $318,888,000 or 58 per cent for equipment and $231,010,000 or 42 per cent for road.

Meanwhile, the bureau had given

first place in the "Comment" to its latest analysis of operating averages for freight-train service. The analysis compared data for the first nine months of 1947, 1944, 1939 and 1929, covering, as the bureau put it, "the latest postwar period, a corresponding period for the year of peak war traffic, the peak traffic year of the Twenties and a period of heavy traffic 10 years later."

In the 1947 period freight traffic density, as measured by net ton-miles per mile of road per day, was about 12 per cent below 1944 (8,360 as compared with 9,553); but it was more than double that of 1939 and 48 per cent above the 1929 figure. "Significant operating averages reflecting freight-train and freight-car performance for the 1947 period compare quite favorably with those for the 1944 period during which the carriers were operating under extreme wartime pressure," the bureau observed. Noting that some of the 1947 averages were higher than those of 1944, it suggested that this was "presumably" due to "the enormous freight traffic of 1947."

Greater Efficiency Shown

All of the 1947 averages were found reflecting "a marked improvement in the operating performance over the same period in 1939 or 1929," except as to freight-train speed, the train-miles per train-hour in the 1947 period being 16.1 as compared with 1939's 16.8. However, the train load (net ton-miles per train-mile) increased 44 per cent in 1947 over 1939, being up from 792 to 1,143. What the bureau called "the important average" of net ton-miles per freight car day was 981 in the 1947 period, only about 8 per cent below 1944's 1.067 and 95 and 79 per cent above the averages for the 1939 and 1929 periods, respectively.

"The condition of freight equipment as shown by 'per cent unserviceable,'" the bureau continued, "was not as favorable in 1947 as in 1944, but for both locomotives and freight cars the 1947 situation showed marked improvement over 1939, and it was somewhat better than in 1929. Quite probably the decrease in serviceability under 1944 reflects the acceleration of the wear and tear on equipment resulting from the largest peacetime volume of traffic following almost immediately upon the enormous volume of the four war years 1942-45."

The 1947 figure for unserviceable freight locomotives was 16.3 per cent, compared with 12.3 per cent in 1944, 30.7 per cent in 1939, and 16.5 per cent in 1929. The figure for unserviceable freight cars was 4 per cent, compared with 2.5 per cent in 1944, 12 per cent in 1939, and 6.1 per cent in 1929.

Data comparing maintenance-hours and gross ton-miles on the basis of index numbers computed with 1939 as 100 show that, except for the 1945 maintenance of way and structures index, the maintenance indexes for both way and equipment "fluctuate directly with the annual changes in gross ton-miles," as the bureau put it. The comparisons cover the years from 1937 to 1946 inclusive, but the bureau estimated, on the basis of nine-months traffic, that the 1947 gross ton-mile index "will probably be rather close to 155." The 1946 index was 150.7. In further comment on the showing, it said:

"During the period 1940-46, when both freight and passenger traffic were very heavy, changes in the equipment maintenance index follow more closely the changes in the ton-mile index than do those of the index of way and structures, presumably reflecting the necessity of keeping the cars and locomotives moving. The man-hour indexes of maintenance of way and structures and of equipment were not as high as those for gross ton-miles in the 1940-1944 period, but they followed a similar course. In 1945, however, both of the maintenance man-hour indexes were somewhat higher than the gross ton-mile index. This was also true in 1946 for maintenance of equipment but the maintenance of way index dropped 30 points below that of 1945 as compared with a drop of 16 points in the case of maintenance of equipment and a drop of 17.6 points for gross ton-miles. This abrupt decrease in the maintenance of way index, however, is due chiefly to the fact that it did not follow the sharp decrease of the gross ton-mile index between 1944 and 1945. From 1944 to 1946 each dropped about 28 percentage points."

Another tabulation in the same article showed the number of man-hours of maintenance employees per million gross ton-miles for the years 1937 through 1946, and for the first nine months of 1947, also with index numbers based on 1939 as 100. Except for 1939 there was an uninterrupted decline in man-hours of maintenance per million gross ton-miles (equipment, way and structures, and the composite of the two) from 1937 through 1942. Similarly there was an uninterrupted increase for all three ratios from the last-named year through 1945.

The composite ratio of 97.4 for 1946 was a drop from 1945's 100.2, indicating to the bureau that "perhaps the upward trend was halted or the downward trend is by way of being resumed." The latter possibility, it added, "is supported by the fact that for the first nine months of 1947 all three ratios were not only below 1946 but were also below 1945 and that both the way and structures and composite ratios for the nine months period were even below those of the full year 1944."

The "Comment" noted that during the first half of 1947 732,366,612 tons of freight were originated on Class I roads and 680,459,381 tons were terminated. Gross freight revenue, unadjusted for absorptions and corrections, amounted to $3,549,774,789, or $4.85 per ton originated and $5.22 per ton terminated. By commodity groups the revenue per ton originated ranged from $2.23 for products of mines to $22.59 for l.c.l., if forwarder traffic (with revenue of $25.96 per ton) be included in the Manufacturers and Miscellaneous group as it was until the new classification became effective this year. The range in 1946 was from $2.01 for products of mines to $18.92 for l.c.l.

Effect of Ex Parte 162

Noting that the 1947 period's revenue of $4.85 per ton originated was only 5.4 per cent above the comparable 1946 figure of $4.60, the bureau undertook to reconcile that showing with the fact that the Ex Parte 162 increases, averaging approximately 17.6 per cent, became effective the first of this year. Approximate reconciliation was accomplished by adjusting the figures to make those for both years reflect the same consist of traffic and the same length of haul. As thus adjusted the average revenue per ton terminated in 1946 dropped from $4.60 to $4.33, while the comparable 1947 revenue went up from $4.85 to $5.08. "This," as the bureau put it, "would be an increase in 1947 over 1946 of 16.9 per cent, a figure not far from the 17.6 per cent estimated for the full increase in rates."

The bureau's usual analysis of the latest revenue results showed that the October freight revenue, after adjustment to a 30-day month, was 8.5 per cent above September and 17.2 per cent above October, 1946. October passenger revenues, on the same basis, were 9.7 per cent less than in the previous month and 16 per cent below October, 1946. The freight-revenue index (based on the 1935-39 monthly average as 100) was 247.6 for October, exceeding, the bureau said, "any of the war period indexes." The comparable figure for September was 228.3 while that of October, 1946, was 211.2. The October passenger index, at 214.2, compared with September's 237.1 and October, 1946's 255.1. Net railway operating income for 12 months ended with October was $801,365,000 and net income was $488,408,000. These compared, respectively, with $470,619,000 and $119,634,000 for the 12 months ended with October, 1946, and with $996,967,000 and $596,824,000 for the 12 months ended with October, 1945.

Wabash Installs "City of Kansas City"

Over 200 revenue seats in daylight coach train built by American Car & Foundry Co.—Train consists of two head-end cars, a buffet coach, two coaches, a diner, and a parlor-observation car

THE "City of Kansas City," a streamline train for daytime service between St. Louis, Mo., and Kansas City was recently placed in service by the Wabash. Built by the American Car & Foundry Co. at its St. Charles, Mo., plant, it consists of a baggage car; a baggage-mail car; a coffee-shop coach, seating 60 revenue passengers; two coaches, each with revenue seats for 58; a diner, with seats for 40 in the dining room, and an observation-parlor car, with 24 seats in the parlor section, 5 in the drawing room, and 18 in the observation room. There is a total of 205 revenue seats.

The train is powered by a 2,000-hp. Diesel-electric unit built by the Electro-Motive Division of General Motors. Its time for the 278-mile trip is 5 hr. 20 min., westbound, and 5 hr. 40 min., eastbound.

The train has been designed and styled to provide an appearance of unity from locomotive to observation end. Fluted aluminum sections at the eaves, the lower edge of the letter board, and the sides from belt rail to side sill run the full length of the cars, except across the doors, while the letter boards, pier panels and skirts are Wabash blue. The general effect is that of blue and aluminum bands running the length of the train. The aluminum band below the belt rail culminates at the rear in an electrically lighted sign built into the car, the design for which was especially prepared by the Wabash. It reads "City of Kansas City."

Coffee-Shop-Club Coach

An unusual feature of the train is the second coach which, in addition to having a revenue seating capacity of 60 persons, has a complete refreshment section in the center for serving soft drinks, ice cream and sandwiches, and serving generally as a coffee shop. This buffet gives the traveler desiring only a light meal a more suitable place for a bite to eat than regular dining-car space. It is also expected to attract business by providing between-meals refreshment. The semicircular counter is against one wall, with work space contained by wall and counter, a loose leaf in the counter making for easy access. Ten bar stools of the returnable pedestal type are placed in a semicircle around the counter with red leather and chromium swivel seats. In each of the two free corners of the buffet are individual seats, also red-leather upholstered. Triangular tables provide a place for food and beverages at these seats.

The buffet is equipped with fountain and luncheon facilities. The Formica top counter, which is faced on the outside with gray linen-finish Formica, has lockers, work space, bottle cooler, and

other necessary facilities underneath. Against the car wall is a sink, ice-cream storage space, and back bar with a display space on each end and a mirror over the coffee maker and toaster shelf extending from one display case to the other. In the floor is a trap door with flush lifts for access to empty-bottle storage space.

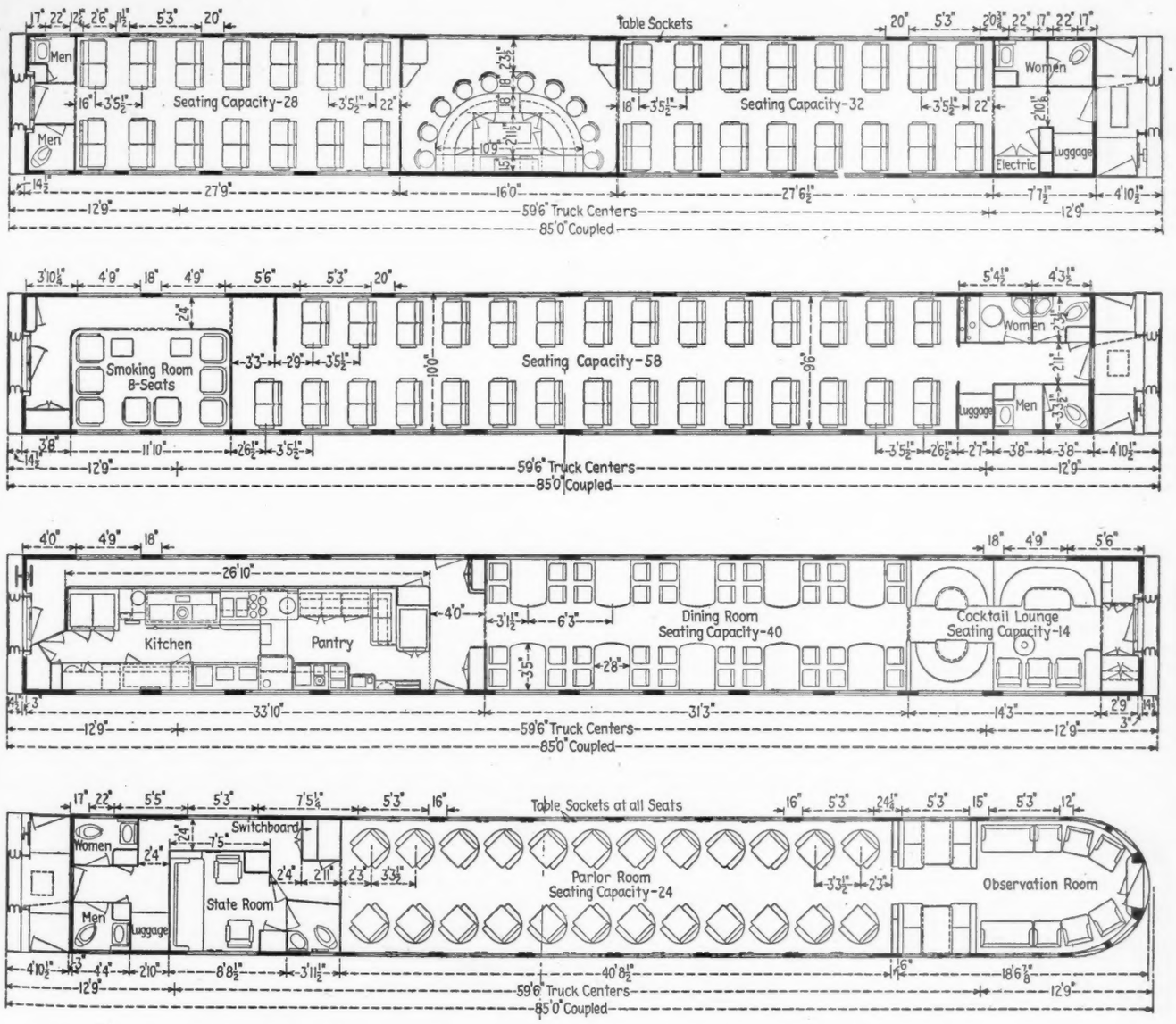
The interior decorative scheme of the car features enough variety in color to forestall any tendency towards monotony. Dark and light gray form the motif of the coach sections and dark and light blue provide the main decorative effect in the buffet, with aluminum-trimmed windows throughout. Curtains are aluminum-colored Pantasote, while the flooring is two-tone brown plastic. The aisleway is emphasized by 2-in. stripes of two-tone cream plastic. Luggage shelves at the vestibule end are laid with two-tone brown plastic, while the toilets and washrooms are aluminum with two-tone blue plastic flooring.

Seating is the Sleepy Hollow type. All double seats, except at the end of the sections, recline to suit the passengers' pleasure. Over the seats are parcel racks in which are two recessed reading lights at each seat. Each lamp in the twin lights can be turned on or off by the individual passenger. The light is concentrated where needed and does not annoy the other occupant of the seat. Lighting is entirely incandescent, with four ceiling fixtures in each passenger section. All exposed surfaces of electrical fixtures have satin aluminum finish to conform to the general decorative scheme.

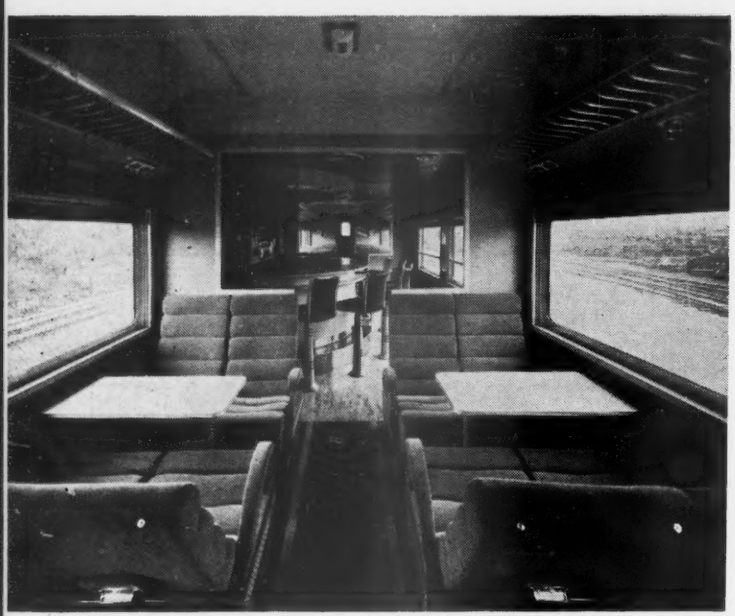
Other facilities include a men's toilet room and a washroom in separate units at the blind end of the car, and a women's toilet room and a washroom in adjoining communicating units at the vestibule end. An electric water cooler, electric lockers, and luggage shelves are also located at the vestibule end.

Coaches

The two coaches of the "City of Kansas City" have identical accommodations, but different decorative treatment. The coach section seats 58 persons and the smoking room, for both men and women, seats eight. The partition around this smoking room has five clear glass panels, affording a view of the scenery on both sides of the train. Smoking-room seating consists of semi-lounge-type aluminum chairs, upholstered with blue leather in coach No. 1425 and tan needlepoint in coach No. 1426. In the main part of the coach



Floor plans of the passenger-carrying cars—From top to bottom: the coffee-shop club lounge, the 58-passenger coach, the dining car, and the parlor-observation car



Above—The parlor car looking toward the observation section. Left — The counter at the center of the coffee - shop coach. Below—the dining room seen from the cocktail lounge

are rotating and reclining double Sleepy Hollow seats. These are spaced 3 ft. 5½ in. on centers. Other facilities include the men's and women's washrooms and toilets at the vestibule end, a three-shelf suitcase rack to take care of baggage not easily kept at the seats, and an electric water cooler in each car. Lighting is provided by nine center ceiling lights and by twin lights in the parcel racks over each seat. Each lamp in the twin lights can be turned on or off by the individual passenger. All lighting is incandescent.

The color scheme in coach No. 1425 is attained with cream painted ceiling, Florentine-red window curtains against tan walls, light-gray seat upholstery, and two-tone brown plaster flooring. The aisle is accentuated by two tone cream stripes 2 in. wide on each side. Bulkheads are a medium gray. Coach No. 1426 features a medium-gray deck with canary-yellow walls as a background for beige seating and blue window curtains. Flooring is two-tone gray plastic with two-tone blue aisle striping along the seat edges. Bulkheads in this coach are brown. In both coaches, the women's toilets are beige, while in coach No. 1425 the men's toilets are wisteria and, in the other coach, light blue.

Dining Car

The dining car of the "City of Kansas City" has a larger capacity than was formerly considered standard. The car is divided into four sections—a cocktail lounge, dining room, pantry, and kitchen. The cocktail lounge serves as a convenient place for passengers to await their turn for dining space. Since the dining-room seating capacity of 40 compares with a total revenue seating space of 205 for the train, it requires only five sittings, even when the train is fully loaded, to take care of practically all of the passengers.

The inside finish of the dining section is predominantly American rift-oak Flexwood with ceilings of gray. Walls and ceiling in the passageway are gray with gray-green roller curtains. Window capping in the passageway is white Formica. In the dining section the window capping is light chocolate Formica, while Da-Lite control venetian blinds are oyster white with matching frames.

Chairs are aluminum throughout with olive-green leather upholstery, against which the two-tone brown carpet presents a pleasing contrast. It covers the floor from the car door at the cocktail-lounge end to the bulkhead at the kitchen end of the dining room. The room has ten four-passenger tables, five on each side of the car. During periods of light business tables seating two are substituted along one side of the car,

reducing the number of seats to 30 and increasing aisle space. An impression of length is afforded by the use of mirrors on the dining-room-kitchen bulkheads, extending from window-sill height to corner light, one on each side of the opening. The mirrors are framed in light chocolate Formica.

The cocktail lounge is simply arranged with four passenger groupings, two on each side of the car. Three consist of semicircular Formica-top tables with a curved settee facing the center of the car. The fourth is a group of three semi-lounge chairs, a combination smoking stand and ashtray, and a separate magazine table at the end of the lounge. The furniture is walnut with mauve leather upholstery for the semicircular settees, while the three semi-lounge chairs are aluminum with mauve leather over rubber upholstery. The magazine table is walnut.

Window capping in the lounge is Formica, colored dark cocoa beige. All casings around the windows are extruded aluminum, satin finish, against a background of beige walls and ceiling. The partition between the lounge and dining room features six 2-in. Lucite rods spaced 6 in. on centers on each side, interlaced with Duro leather. The rods show a rosy luminous glow originating from lamps in the base of the partition. Provisions had to be made to ground the Lucite rods electrically to prevent the collection of dust.

The kitchen and pantry equipment was furnished and installed by Angelo Colonna. There are a number of electrical devices for increasing the efficiency of this work space. An electric refrigerator with self-contained compressor is in the kitchen, sufficiently removed from the range to prevent loss of efficiency. The refrigerator is for provisions; another unit serves as a fish locker. Two additional electro-mechanical refrigerators in the pantry serve as storage for foods not handled by the cooks. Other electrical appliances are the dishwasher complete with self-contained pump and an electric garbage-disposal unit.

Against the passageway wall of the kitchen are the provisions refrigerator, charcoal and coal bins, coal range, charcoal broiler over the range, with plate rack and steam table next to the pantry in that order. Against the wall, starting at the end of the car, are a storage and clothes locker, mop locker, work table with an edge-grain wood top, with fish box underneath the washing sinks and dishwasher. The pantry is complete with ice-cream cabinets, coffee urns, refrigerators, lockers, glass washer, iced dish cooler, bottle cooler, and cracked-ice bin.

The decorative scheme in the observation-parlor car is based on a generous use of pleasingly contrasting color. The ceiling in the observation section is gray as are the walls, with the heater-pipe guard painted golden bronze. In the observation section the window capping is continuous brown Formica, while the partition between the observation section and the parlor section is covered on both sides with mottle aspen Flexwood. This partition is a double wall of Plymetl containing built-in bookshelves at the aisle.

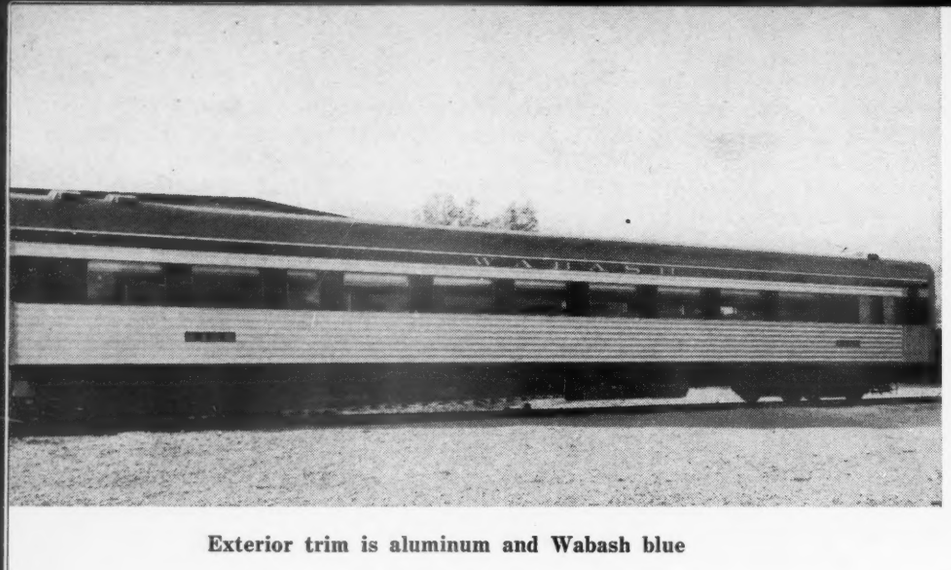
Observation-Lounge

The observation lounge is equipped with two settees for two persons each, and six individual lounge chairs. In addition, the forward end of this section of the car has two card tables with facing double seats. All seating is Airfoam rubber with wine-colored leather upholstery. At the rear is a brown Formica-topped table with lockers underneath containing radio equipment, back-up equipment, and Mars light control. The floor covering is blue carpet laid on felt carpet cushion. Windows are draped with tan Loomcraft and have Da Lite control venetian blinds with wood slats painted oyster white, and frames of golden bronze. Window casings are of aluminum, also finished in golden bronze.

Lights are of the continuous ceiling type for the observation end. To prevent eye fatigue, all windows of the observation end are flat panes of glass. The parlor section has a capacity of 24, the outstanding feature being the Sleepy Hollow, full-revolving reclining-back parlor-car seats upholstered in a modified cerise. Visual ease has been obtained by the use of a beige ceiling, pink forward partitions, and pink walls. A stainless-steel protection base 6½ in. high is applied to all partitions. Wide window capping in the parlor section forms a continuous shelf for purses. This is covered with light blue-gray Formica. Venetian blinds are oyster white with frames of aluminum, satin finish. The blue carpet is carried through the parlor room and passageway, where pink walls offer a pleasing contrast.

There are fluorescent lights in the luggage racks, as well as a continuous ceiling fixture. The same type of lighting is used in the ceiling of the passageway. Fixtures in the toilet rooms are over the mirrors and represent one of the few uses of incandescent lamps in the car. The only other incandescent lights are in the vestibules and small emergency lights. All exposed electrical fixtures have aluminum satin finish. Car windows, with the excep-

The kitchen



Exterior trim is aluminum and Wabash blue

tion of those in the curved portion of the observation room, are 5 ft. 3 in wide.

The stateroom in this car is 8 ft. 8½ in. long by 7 ft. 6 in. wide. Its commodiousness is accentuated by the 7-ft. sofa, with small magazine rack at the passageway end. The ceiling is gray and there is a two-tone brown carpet. Partitions are tan, and outside and passageway walls are canary yellow. The window drapes are blue. Accommodations are for five; three on the sofa, and one in each of the two movable lounging chairs, which are walnut with Airfoam rubber and gray leather upholstery. There are two fluorescent lighting fixtures in the ceiling and two more are integral with the baggage rack over the sofa. Adjoining is a private toilet complete with wash basins, shelves, and mirrors. Other improvements are individually controlled air conditioning and a wardrobe.

Baggage-and-Mail Car

The baggage-and-mail car is divided into a postal compartment, 30 ft. 1 in. long, and a baggage compartment, 39 ft. 10 in. The R.P.O. is completely equipped according to U.S. Postal specifications and is complete with toilet and wash facilities. The partition between the baggage and mail sections of this car consists of a door to which is attached a rack for use in sorting mail. Unlike other partitions, this one may be opened when necessary to afford passage through the entire train. The baggage room has toilet facilities, a water cooler, desk, fan over the desk, and letter case for preparing records and handling railroad mail. At one end is a fish rack 13 ft. long of standard subway grating for handling ice-packed containers. There are two doors in the baggage compartment and one in the postal section on each side of the car.

Construction

The other head-end car is equipped the same as the baggage compartment of the baggage-and-mail car, except that there are fish racks at both ends of the car, and no toilet facilities.

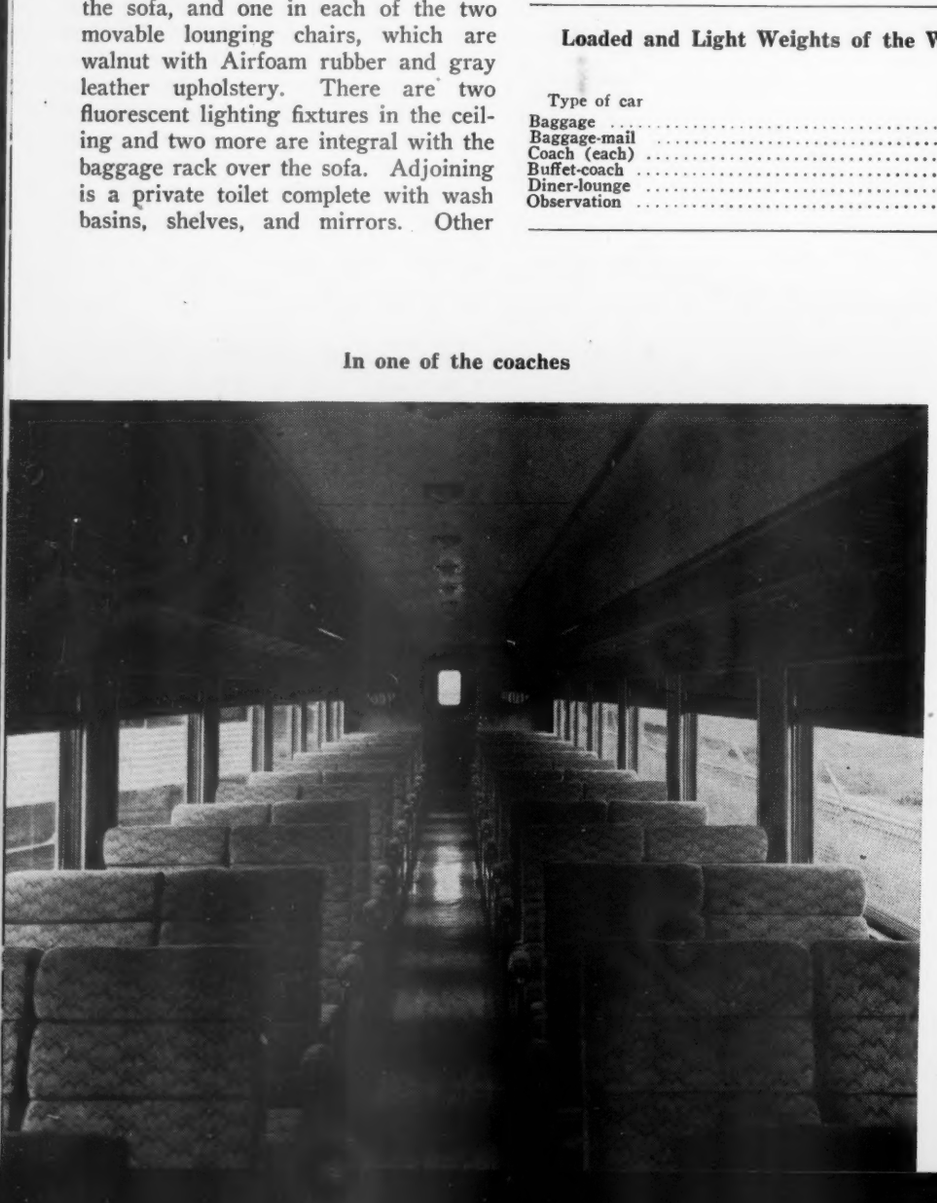
All cars of the "City of Kansas City" are designed with the same general specifications and comply with the latest A.A.R. and U.S. Post Office construction requirements with special consideration to collision resistance. Framing is of low-alloy high-strength steel, except the center sills and main end posts which are of open hearth steel with a minimum yield point of 36,000 lb. per sq. in. Side and roof sheathing and skirts are aluminum. Fluted aluminum molding is applied over the sheathing from side sill to belt rail, at the lower edge of the letter board, and at the car eave. The steel framing is welded in assembly units and the aluminum sheathing riveted thereto after units have been assembled by concealed riveting. The rivets in the lower sides are concealed by the fluting. Exposed rivets at the pier panels are of a special low-head streamline type.

Center sills are made of two A.A.R. Z26 section welded completely along the top flanges, with a bottom cover plate between bolsters and top channel reinforcement back of the bolsters. The side sills are built up of two members. The underframe member is an 8.2-lb. Z-section; the side member is an angle. The built-up bolsters are of welded construction with 40-in. by 5/16-in. top cover plate and 16-in. by ½-in. bottom cover plate on all passenger-carrying cars. Added strength is provided by two diagonal braces at each end of the car. Of pressed steel, they run from the bolster at the center sill to the end sill.

Loaded and Light Weights of the Wabash "City of Kansas City" Cars, Lb.

Type of car	Body	Trucks	Total light weight	Loaded weight
Baggage	58,520	39,780	98,300	158,300
Baggage-mail	67,400	39,800	107,200	152,470
Coach (each)	93,300	38,500	131,800	146,000
Buffet-coach	95,400	38,500	133,900	149,500
Diner-lounge	101,300	40,700	142,000	155,100
Observation	91,300	38,500	129,800	140,000

In one of the coaches



Crossbearers of No. 12 gage pressed Z top and bottom members, with angle braces, are placed at five positions in each passenger-carrying car. Four in each head-end car are sufficient because of their shorter length. Floor beams are No. 12 gage pressed Z-sections.

The end frame and platform has a 28-lb. CB-82 beam for main end posts, with ½-in. shear plates. End sills and buffer wings are A.C.F. built-up design, while the buffer casting is a combined buffer and center sill extending through the bolster. The vestibule floor is Alumalun over steel. Body corner posts and vestibule corner posts are of pressed-steel design. The end plate at the vestibule end is of truss construction, while at the blind ends of the passenger cars are 12-in. 25-lb. channels with additional angle reinforcements. The exception is the observation end of the parlor car which is a built-up design of comparable strength. End sheathing at both ends is No. 12 gage steel, except the rear end of the observation car which is aluminum.

Side Frames

A considerable use of aluminum is found in the construction of the side frames. Sheathing and letter board are No. 10 B. & S. gage aluminum, riveted to the framing. Window panels are aluminum with stiffeners of the same material. Skirts are No. 10 gage aluminum molded to conform to A.A.R. contour. The framing to which all these are attached is of steel. The side-frame side plates are 5 in. by 3 in. by 7/16 in. and roof-frame plates 2½ in. by 2½ in. by 3/16 in., by members being angle sections. They are reinforced with an 8-in. by ¼-in. plate, which is riveted to the roof side plate and to the side-frame posts. The belt rail is a pressed 10-gage U-section with 3-in. by ¼-in. bar reinforcing inside and outside. Two No. 12 gage pressed Z-sections, reinforced by continuous bars inside, stiffen the letter board.

The contour of the roof is to A.A.R. specifications. Roof sheets are supported by No. 12 gage 3-in. pressed Z-shaped carlines, reinforced with No. 16 gage flange sheets at the center and a bottom truss of 2-in. by 2-in. by ⅛-in. angles. Full-length purlines of No. 16-gage 3-in. pressed Z-shapes and two full-length 5-in. by 6.7-lb. channels comprise the horizontal supporting members. Eave molds and gutters over the side doors are extruded aluminum.

The floor construction in the passenger cars consists of a false floor of No. 16 gage Galvannealed steel and a top floor of No. 18 B. & S. gage aluminum Keystone atop No. 12 gage pressed Z-shaped stringers. The two coaches, the buffet coach, and the observation-parlor

Partial List of Materials and Equipment on the Wabash "City of Kansas City"

Aluminum shapes, plates, sheets, castings, and outside snap-on mouldings	Aluminum Co. of America, Pittsburgh, Pa.
Steel Castings	American Steel Foundries, Chicago Lebanon Steel Casting Co., Lebanon, Pa.
Cor-Ten steel	Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Truck frames; buffer castings	General Steel Castings Corp., Eddystone, Pa.
Wheels; axles	Standard Steel Works, Div. of Baldwin Locomotive Works, Burnham, Pa.
Springs	American Locomotive Co., Railway Steel Spring Div., New York
Upper buffer spring	Standard Railway Equipment Manufacturing Co., Hammond, Ind.
Draft gear, twin-cushion	Waugh Equipment Co., New York
Couplers and yokes	National Malleable & Steel Castings Co., Cleveland, Ohio
Bolster locking center pin	W. H. Miner Inc., Chicago
Side bearings	Railway Products Co., Chicago
Shock absorbers	Houde Engineering Div. of Houdaille-Hershey Corp., Buffalo, N. Y.
Roller-bearing wheel units	Hyatt Bearings Div., General Motors Corp., Harrison, N. J.
Sound-deadening pads	Fabreeka Products Co., Boston, Mass. United States Rubber Co., New York
Cork tape	Armstrong Cork Co., Lancaster, Pa.
Electro-pneumatic brakes	Westinghouse Air Brake Co., Wilmerding, Pa.
Clasp brakes	American Steel Foundries, Chicago
Hand brakes	W. H. Miner, Inc., Chicago
Brake shoes	American Brake Shoe Co., New York
Diaphragm rubber	B. F. Goodrich Co., Akron, Ohio
Trap doors and folding vestibule steps	United States Rubber Co., New York
Weatherstrip	Harnley Weatherstrip Co., Chicago O. M. Edwards Co., Syracuse, N. Y.
Insulating materials:	
Fiberglas	Gustin-Bacon Manufacturing Co., Kansas City, Mo.
Insulmat	J. W. Mortell Co., Kankakee, Ill.
Stonefelt	Johns-Manville Sales Corp., New York
Felt	Western Felt Works, Chicago
Doors:	
Inside	Haskelite Manufacturing Corp., Chicago Met-L-Wood Corp., Chicago
Outside	American Car & Foundry Co., New York
Door locks and hinges	Adams & Westlake Co., Elkhart, Ind. Dayton Manufacturing Co., Dayton, Ohio Loeffelholz Co., Milwaukee, Wis. Soss Manufacturing Co., Detroit, Mich. Yale & Towne Manufacturing Co., Stamford, Conn.
Door holders	H. S. Getty & Co., Philadelphia, Pa.
Dor Tite	Durkee-Atwood Co., Minneapolis, Minn.
Door closers	Russell & Erwin Mfg. Co., New Britain, Conn.
Side baggage door hangers	Midland Co., South Milwaukee, Wis.
Baggage door bumpers	Atlantic India Rubber Works, Chicago
Masonite	Masonite Corp., Chicago
Plymetl	Haskelite Manufacturing Corp., Chicago Met-L-Wood Corp., Chicago
Flexwood	United States Plywood Corp., New York
Screws for aluminum and Plymetl	Parker-Kalon Corp., New York
Anti-squeak tape	Presstite Engineering Co., St. Louis, Mo.
Flexolith composition flooring	Tuco Products Corp., New York
Galvannealed steel flooring	Continental Steel Corp., Kokomo, Ind.
Keystone floor	American Car & Foundry Co., New York
Alumalun vestibule floor and threshold plates	
Plastic floor covering	American Abrasive Metals Co., Irvington, N. J.
Floor grating	Goodyear Tire & Rubber Co., Akron, Ohio
Sash	Irving Subway Grating Co., Long Island City, N. Y.
Glass and mirrors	Adams & Westlake Co., Elkhart, Ind. Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Pressed prism safety glass	Saftee Glass Co., Philadelphia, Pa.
Window and vestibule curtains	Waterhouse & Co., New York
Curtain material	Pressed Prism Plate Glass Co., Morgantown, W. Va.
Venetian blinds	Adams & Westlake Co., Elkhart, Ind.
Formica and window capping	Pantasote Co., New York Ajax-Consolidated Co., Chicago Formica Insulation Co., Cincinnati, Ohio
Reclining seats	J. Zicherman & Son, New York
Airfoam seats	Heywood-Wakefield Co., Gardner, Mass.
Sofas, chairs, tables	Goodyear Tire & Rubber Co., Akron, Ohio
Dining-room chairs	Mandel Brothers, Chicago
Dining-car benches	General Fireproofing Co., Youngstown, Ohio
Drapery materials and seat coverings, coach and parlor-car seats	Blanchard Bros. & Lane, Newark, N. J.
Leather upholstery	Goodall Fabrics, New York Cleveland Tanning Co., Cleveland, Ohio
Lucite rods	Lackawanna Leather Co., Hackettstown, N. J.
Duro leather lacing	E. I. du Pont de Nemours & Co., Arlington, N. J.
Carpeting	Schwartz Belting Co., New York
Bar	Mandel Brothers, Chicago
Plastic on bar	Walrus Manufacturing Co., Decatur, Ill.
Ash stands and serving trays	Goodyear Tire & Rubber Co., Akron, Ohio Marshall Field & Co., Chicago Smokador Mfg. Co., Bloomfield, N. J.
Ash receivers	Adams & Westlake Co., Elkhart, Ind.
Parcel racks	Luminator, Inc., Chicago
Kitchen and pantry equipment; range and steam table; dishwasher	
Kitchen blowers	Angelo Colonna, Philadelphia, Pa. B. F. Sturtevant Div. of Westinghouse Electric Corp., Hyde Park, Boston, Mass.
Toaster	Stearnes Co., Chicago
Coffee maker	Silex Co., Hartford, Conn.
Deodorizer	West Disinfecting Co., Long Island City, N. Y.
Drinking-water coolers	General Electric Co., Schenectady, N. Y. Henry Giessel Co., Chicago
Cup dispensers	Logan Drinking Cup Div., United States Envelope Co., Worcester, Mass.
Batteries	Edison Storage Battery Div., Thomas A. Edison, Inc., West Orange N. J. Electric Storage Battery Co., Philadelphia, Pa.
Charging receptacles	Pyle-National Co., Chicago
Axle-lighting equipment	Safety Car Heating & Lighting Co., New York
V-belt generator drive	Dayton Rubber Mfg. Co., Dayton, Ohio
Lighting fixtures	Luminator, Inc., Chicago Safety Car Heating & Lighting Co., New York
Electric wire	Kerite Insulated Wire & Cable Co., New York Okonite Co., Passaic, N. J.
Electrical receptacles	Cutler-Hammer, Inc., Milwaukee, Wis.
Electric razor converters	Electronic Laboratories, Indianapolis, Ind.
Electric conduit and fittings	Aluminum Co. of America, Pittsburgh, Pa. Crannell, Nugent & Kranzer, Inc., New York Pyle-National Co., Chicago Thomas & Betts Co., Elizabeth, N. J.

Radio equipment	Walter Ashe Radio Co., Chicago Jensen Radio Co., Chicago Stromberg-Carlson Co., Rochester, N. Y.
Motor generator set for radio	Janette Manufacturing Co., Chicago
Air-conditioning equipment	Frigidaire Div., General Motors Corp., Dayton, Ohio
Anemostats	Anemostat Corp. of America, New York
Exhaust fans	Diehl Manufacturing Co., Somerville, N. J. Safety Car Heating and Lighting Co., New York
Exhaust ventilators	Garland Ventilator Co., Mound, Minn.
Uni-Flo grilles	Barber Colman Co., Rockford, Ill.
Steam heat trainline	A. M. Byers Co., Pittsburgh, Pa.
Heating ekuipment and air-conditioning controls	Vapor Car Heating Co., Chicago
Vulcan fin radiation	Vulcan Radiator Co., Hartford, Conn.
Train connectors	Pyle-National Co., Chicago
Folding washstands; used towel receptacles	Adams & Westlake Co., Elkhart, Ind.
Towel dispensers	American Paper Manufacturing Co., New Orleans, La.
Toilet-paper holder	Scott Paper Co., Chester, Pa.
Pipe, wrought iron	A. M. Byers Co., Pittsburgh, Pa.
Lavatories, pipe fittings	Crane Co., Chicago
Flush hoppers	Duner Co., Chicago
Copper pipe and fittings	Chase Brass & Copper Co., Waterburgh, Conn. Mueller Brass Co., Port Huron, Mich.
Pipe insulation, steam	Johns-Manville Sales Corp., New York
Pipe insulation, cold water	Union Asbestos & Rubber Co., Chicago
Motor alternators	Safety Car Heating & Lighting Co., New York
Fire extinguishers	Pyrene Mfg. Co., Newark, N. J. W. J. Roehl, Inc., St. Louis, Mo.
Paint, exterior and interior	Cook Paint & Varnish Co., Kansas City, Mo.
Alumilastic sealing compound	Parr Paint & Color Co., Cleveland, Ohio
Tanks	American Car & Foundry Co., New York
Air filters	Air Filters Co., New York American Air Filter Co., Louisville, Ky.
Rear signal light	Mars Signal-Light Co., Chicago

car have the Keystone flooring filled and covered to a depth of 5/16 in. with Flexolith composition. In the baggage cars 1¼-in. by 2-in. nailing stringers are bolted to the steel Z-stringers. Top floors in these two cars are two courses of wood flooring with waterproof paper between courses. The lower course is 25/32-in. tongue-and-groove laid diagonally, while the top course is laid longitudinally, except at the side doors where it is laid crosswise. Fish racks consist of subway grating flush with the top of the floor with stainless-steel floor pans and drain tubes underneath.

Electrical power in the baggage-and-mail and baggage cars is provided by a body-hung axle generator with V-belt drive. Each generator is 4 kw. with 40 volt d.c. Standby power is supplied by one set in each car of Edison type storage batteries of 350-amp.hr. capacity in the baggage car, and 510-amp.hr. capacity in the car containing the postal section. The cars are completely equipped electrically both as to lighting and the 16-in. three-speed fans in the baggage-mail car, the intensity and placing of lights conforming to Railway Mail Service requirements.

In the passenger-carrying cars 25-kw. 40-volt d.c. generators with 25-hp. motors with V-belt-and-gear drives provide electric power. In the dining and observation cars, where fluorescent lighting predominates, 3,000-watt motor alternators are used to convert 32-volt d.c. to 110-115-volt 60-cycles a.c. Passenger cars are amply supplied with storage batteries of 1,294-amp.hr. capacity, 16 cells assembled in two-cell wood trays. Each of the coaches has a razor converter with an outlet in the men's room. Receptacles for train line, battery charging, and standby power are provided.

Exhaust fans are in each toilet and smoking room, over the bar ceiling in the buffet coach, and in the dining-car kitchen. The kitchen also has a fresh-air intake blower with 9-in. intake fan.

A Mars Figure-8 red signal light has been installed in the roof in the rear of the observation car. This light operates automatically with a service or emergency air-brake application and, in case of emergency, it can be manually operated. It is built in to blend with the contours of the car.

Brakes

The "City of Kansas City" is equipped with Westinghouse Schedule HSC electro-pneumatic air brakes with D-22 BR control valves on each car. Individual speed governor, controls, and AP Decelostat equipment is also provided. Brake cylinders are truck mounted.

End Equipment

National A.A.R. Type H tight-lock rotary-operating passenger couplers have been installed. Of high-tensile steel, they are for left-hand operation. Coupler yokes are A.A.R. tight-lock, of high-tensile steel with radial connections. Waughmat twin-cushion draft gears are applied throughout.

Doors are aluminum construction. The baggage car is equipped with one 6-ft. and one 8-ft. door on each side. In the baggage-and-mail car, the mail compartment doors are 3 ft. 2 in. with R.M.S. standard fixtures. The baggage section has one 4-ft. door and one 6-ft. door on each side. Vestibules for passenger cars are fitted with Dutch type doors. Windows are Adams & Westlake No. 36 breather-type aluminum double-glazed with ¼-in. safety glass inside and ¼-in. heat-absorbing polished glass outside. Toilet sash, high kitchen windows, and postal-section windows are all designed to conform to working requirements and also to blend into the general exterior streamline design.

Insulation

Insulation in the baggage and dining cars is Stonefelt Type M, while the other cars are insulated with Fiberglas. There are 2 in. of insulation under every floor and in the kitchen partition of the dining car. In the sides, ends, and roofs there are 3 in. of insulation secured in place with wire or flat steel bands.

Heating and Air Conditioning

Head-end cars are heated with a Vapor Car Heating vapor system. In the mail room control is by thermostat with Vulcan fin radiation. Operation in the baggage compartment is manual. Other cars have a Vapor zone system with copper-fin radiation and a heat tempering coil built in the air circulating system. Air cooling is from Frigidaire units of seven tons' capacity (six tons in the dining car) with a 70-80-deg. cooling range. Condensers and compressors are hung from the underframe while the evaporating units are above the toilets, except in the dining car where it is above the lounge-room ceiling. Thirty-two-volt power supply from batteries with an a.c. standby receptacle for the compressor motor is also provided. Air ducts are continuous, are well insulated, and arranged with removable panels for periodical cleaning.

Car Trucks

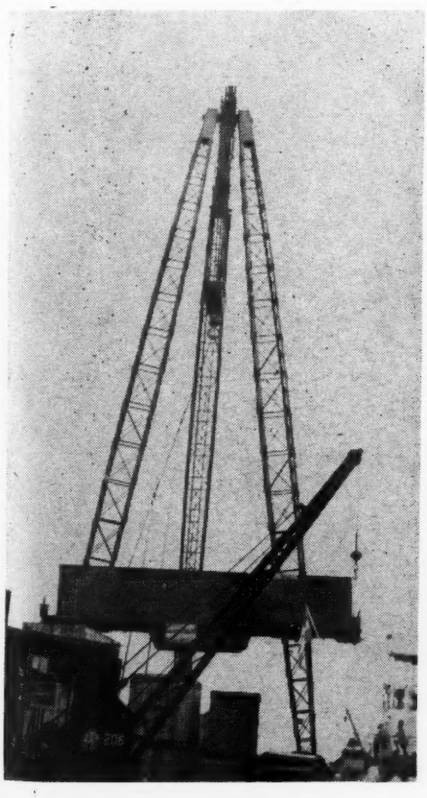
Trucks on all cars are four-wheel with 6-in. by 11-in. Hyatt roller journal bearings on the two head-end cars and the dining car and 5½-in. by 10-in. on the coaches and parlor car. Wheels are 36-in. rolled steel with treads ground after mounting to insure uniform size and concentricity. Suitable axles, which conform to A.A.R. specifications M-101-45 grade C, are arranged for splined bushings for speed control and Decelostats. Truck castings are of nickel-alloy steel, of General Steel Castings Corporation, for all-coil single-equalizer trucks. Equipped with roll stabilizer bolsters, they are arranged for Houdaille shock absorbers. Journal boxes have the stench-bomb type hot-box alarms. One box per car is arranged for speed governor and four boxes for Decelostats. Cushioning for sound and vibration deadening is used generously in the trucks at the equalizer springs, bolsters, wear plates, and truck center plates.

South America's Railroads Look to the Future

PART II

By SEYMOUR T. R. ABT

Transportation and Communications Division, Office of International Trade, U. S. Department of Commerce



Above—A river crossing in Colombia. Below—A crane unloads new freight cars

[*In Part I of this article, which appeared in last week's issue, the railways of Argentina, Uruguay and Paraguay were discussed.*—EDITOR]

Brazil . . .

It is generally recognized that Brazil's inadequate transportation system constitutes a major obstacle in the path of full economic development. The country's vast area demands efficient transportation, and Brazilians have long been acutely conscious of this need.

In recent years many plans have been laid for the improvement both of individual railroad lines and of the system as a whole. Large sums of money have already been spent to improve railroad service, and it is likely that the coming years will see the fruition of other plans. There is as yet no clear indication, however, that future development will be mapped on a national scale.

In January, 1946, the Brazilian government announced a 10-year plan of railway rehabilitation to cost more than $490,000,000. At that time the director of the national Department of Railways indicated that credits would be sought from the United States for the eventual purchase of 17,508 railway cars and 974 locomotives, the re-equipment of repair shops, rail renewals for 8,615 miles of track, and the construction of 9,615 miles of permanent way. The plan was to cover improvements on federally controlled railways as well as new construction.

It is difficult to estimate how much of this plan will ever advance beyond the paper stage, but signs are not encouraging. In October, 1946, a new minister of transport and public works took office, and spoke of Brazil's railroad difficulties as being partially traceable to the lack of a general planning scheme. The credits authorized by the Export-Import Bank to Brazilian railroads during 1946 and the first half of 1947 totaled $20,735,521.

Brazil's major rail-construction project is designed to give continuous metergage transportation from north to south within a relatively few miles of the seaboard. Railroad lines crisscross the coastal region, running inland from various seaports. Except for those in the vicinity of Rio de Janeiro and Sao Paulo, however, most of the lines do not penetrate far inland, and are not connected with other railroads. The linking of these lines, which has already been started, and the improvement of those which are run down, will afford Brazil its first uninterrupted north-south land transport system.

As part of this plan, the Central Railway of Brazil has long been pushing northward out of Rio de Janeiro, its original line having connected the capital with Sao Paulo. Latest reports indicate that the northward construction is proceeding, under the direction of the federal Department of Railways, beyond Montes Claros, which point was reached several years ago.

Another project of the Central Railway is the complete overhauling of the Rio-Sao Paulo line, one of the busiest stretches of railroad in Brazil, as to which there have been optimistic forecasts seeing its completion by the end of 1947. The rebuilt line will have a maximum grade of 0.5 per cent compared with the former 2.2 per cent, and will allow maximum safe speeds of 75 m.p.h. compared with 43 m.p.h. on the old line.

Other plans are being made or have already been acted upon to improve and speed rail service throughout Brazil. The Central Railway has on order in the United States considerable equipment, including locomotives, freight cars, and passenger cars. The Paulista Railway is planning electrification and expansion of its system. The Sorocabana Railway has been attempting to obtain credits for the purchase of new equipment in the United States, and in recent months is reported to have acquired 42 Diesel-electric locomotives.

Five railways were appropriated funds totaling almost $500,000 this year for the purchase and installation of new equipment, according to the 1947 federal

budget of Brazil. The largest item, $213,600, is for machinery needed in the Curitiba shops of the Paranta-Santa Catarina Railway. An additional $106,-800 is earmarked for repair of the roadbed, cable wires, and the acquisition of locomotives and rolling stock for the Leste Brasileiro system. Trucks and car accessories for the Donna Teresa Cristina Railway are listed to the value of $101,500; locomotives and cars for the Cearense, $53,400; and locomotive and car accessories for the Central Railway of Rio Grande do Norte, $21,-400.

In addition to the above, another section of the 1947 budget earmarks $240,-300 "for purchasing rolling stock, locomotives, wagons, frames, including trucks, bumpers, brakes and illumination apparatus for building passenger and open cars" on the Braganca Railway.

Plans for future improvements include a program outlined by the Nazare Railway. This line intends at some future date to build a complete modern shop as well as other installations, and to purchase blowers for the forges and oil furnaces for foundries. Its service is to be improved by the purchase of four Diesel locomotives and two complete trains, each consisting of three first-class coaches, three second-class coaches, a diner, a sleeper, a flat car, and a caboose. Funds for carrying out these plans are expected to come out of income deriving from a recently authorized 10-per cent rate increase.

Perhaps the most publicized of all Brazilian railway projects is one which is not being developed in Brazil, but rather in a neighboring country. This is the line from the Brazilian border across the little-known eastern part of Bolivia to Santa Cruz. The 1947 budget allows $2,563,000 for this construction, which, when completed, will provide transcontinental rail service between Santos, Brazil, and Arica, Chile. Since this service already operates from Santos almost to the Bolivian border, little new construction is necessary on Brazilian soil.

Bolivia . . .

In Bolivia completion of the Santos-Arica road is still many years away, yet it is undoubtedly one of the most significant of the railway projects in South America. Its promoters hope that it will foster trade between Bolivia and Brazil, afford a new sea outlet for Bolivia's mineral exports through the port of Santos, and facilitate the colonization, exploration, and development of the vast interior area. The last of these considerations is of primary importance to both countries, since the region served by the projected railroad is believed to be rich in oil. Bolivia needs this oil, especially as an export commodity. Brazil, without oil of its own and with only inferior coal deposits, is promoting exploitation of the petroleum lands. In accordance with a 1938 treaty it is financing the railroad building in Bolivia under the supervision of the Mixed Bolivian-Brazilian Commission.

The new line is slowly but definitely inching its way westward. In January, 1947, officials of both countries participated in ceremonies inaugurating the opening of 185 miles of the railroad. The celebration announced completion of the stretch from Corumba on the Brazilian border to El Porton, almost half the distance to Santa Cruz. This section of the road took about 8 years to build and it cost approximately $14,000,000.

Transfer table at a South American railway shop

Penetration of the line further westward would not be a simple matter. Construction materials such as sand and rock will have to be carried great distances and the swampy terrain will make construction difficult. Nevertheless, some optimistic forecasters look for completion of the road to Santa Cruz by 1949 or 1950.

West of Santa Cruz, another stretch, 316 miles to Vila Vila, remains to be built in order to complete the Santos-Arica transcontinental line. Bolivia has undertaken this construction as a project independent of the Corumba-Santa Cruz road, and thus far without Brazilian participation. Financial aid for this venture may come from Argentina rather than Brazil.

The work is progressing eastward out of Vila Vila. To date the Bolivian Railroad Administration has completed about 6 miles, including a 177-ft. bridge. A Bolivian construction firm has completed, under contract, an additional 19-mile stretch, with the exception of a 2,559-ft. tunnel, 755 ft. of which still remains to be finished. Beyond that, 12 miles more to Mizque are being undertaken by the railroad administration, but headway has been made only on about 3 miles. Some work has also been started east of Mizque. None of the roadway beyond Vila Vila, however, has rails as yet.

Completion of the railroad is outlined in a 5-year plan, the success of which is contingent on the availability of funds. The total cost from Vila Vila to Santa Cruz is estimated at $35,000,000, including $2,500,000 for rolling stock. In agreements of 1938 and 1943 the Brazilian government was to cooperate with Bolivia in construction of the line. Beyond a survey made by the Mixed Commission, however, nothing has been done to implement these agreements. Although it is still possible that a new agreement calling for Brazilian funds will be concluded between the two governments, Argentina may agree to assume the financial burden instead of Brazil.

Santa Cruz is the target also of a third Bolivian railway project. Under a treaty of February, 1938, supplemented by an agreement of August, 1942, Argentina is to finance construction of a line from Yacuiba on the border to Santa Cruz, a distance of approximately 325 miles. The first section, about 65 miles to Villa Montes, has been started, with Argentina supplying $3,000,000. In June, 1945, the two countries entered into a new agreement, under which Argentina is to advance a total of $29,-750,000 for the construction of the Yacuiba-Santa Cruz line, the Boyuibe-Tarabuco line, a highway from Oran in Argentina to Potosi in Bolivia, and for certain petroleum developments.

Between Yacuiba and Villa Montes the embankment construction is almost complete. Work is in progress beyond Villa Montes for a distance of about 35 miles, the immediate goal being Boyuibe, 126 miles from Yacuiba.

The Boyuibe-Tarabuco line, once referred to as the Potosi-Sucre-Camiri Railway, will tie in with the main Antofagasta-Bolivia Railway at Rio Mulato. The section to Zudanez, 38 miles, is under construction by the Bolivian government. From Zudanez to Boyuibe, 222 miles, construction depends on the availability of funds. The topography is mountainous, requiring 13 tunnels, many of which will need concrete lining. The cost of construction will amount to an estimated $15,000,000, according to Argentine studies.

Originally the line was projected to stimulate petroleum production in the Camiri and adjacent fields. In 1945, however, the Bolivian government de-

cided on a pipe line from these fields to an existing railhead, probably Tarabuco. Construction of the pipe line was begun in 1946 and is now well under way, so that the future of a Boyuibe-Tarabuco railroad is doubtful.

There is one other rail construction project in Bolivia worthy of mention, namely the Yungas Railway. During the closing months of 1946 there was considerable discussion in the Bolivian press concerning the advisability of resuming work on the extension of this line. In 1915, when the road was first projected, it was to reach the Beni River at Rurrenabaque, about 280 miles from the La Paz terminal. In 1925, however, work stopped when the road had progressed only to Ingeniero Tejada, 33 miles from La Paz. Since the railroad never extended far enough to tap the agricultural lands which invited its beginning, it has never done much business.

It is questionable whether any real progress in extending the line to Rurrenabaque will be made. Bolivian estimates fix the cost of construction at $20,000,000, not including $2,000,000 for rolling stock. Extension of the line will require prodigious engineering feats, the country beyond Tajada being characterized by narrow canyons and roaring rivers. In spite of these considerations, however, the committee appointed to foster the project called for bids early in 1947 for construction of the first section, approximately 30 miles, to Chovacolla.

Chile . . .

Railway developments in Chile are now concentrating on the completion of international lines to Argentina, the extension of branches to areas not yet served by rail, and the improvement of various State Railway facilities. Less immediate plans call for the extension of electrification on the railroad's lines.

Two transandean lines have long been engaging the Chilean railroad department, and work on them continues. In the Province of Antofagasta, construction is progressing on the 112-mile stretch between Augusta Victoria and Socompa on the Argentine border. About $419,000 was budgeted for this project in 1947, and plans have been laid for the purchase of rolling stock in the value of $968,000. This road, which will connect with the Argentine railway network, has great potentialities. It is expected to provide the means for the economical exchange of products vital to both countries—Chilean nitrates and minerals to northern Argentina, and Argentine foodstuffs, cattle, and forest products to northern Chile. It will also give northern Argentina access to a Pacific port through which its foreign trade may flow, aided by a comparatively short rail haul.

The second international line is the Transandine Railway in the Province of Malleco. Construction work is still proceeding between Curacautin, to which the railway now extends, and Lonquimay, a distance of about 40 miles. Continuation of this work was allotted $129,000 in 1947. As with the northern line, this railroad will tie in with the Argentine system. It will facilitate the exchange of products between the southern sections of the two countries, an exchange now requiring a long rail or water haul.

Construction of branch lines is being carried out by the railroad department of the bureau of public works. In Cautin Province, work is continuing on the branch under construction between Freire and the shallow port of Tolten, a distance of about 47 miles. The amount budgeted for this project in 1947 was $161,000.

In the Province of Valdivia the branch from Lanco to Lake Panguipulli, 33 miles, is moving ahead, under a 1947 budget of $210,000, while the one from Crucero to Lake Puyehue, 23 miles, is being built with $129,000 assigned to it in 1947. Both of these lines will facilitate the tourist trade in that region. The Osorno-Lake Rupanco branch, 31 miles long in the Province of Osorno, has been allotted $81,000 for its 1947 construction. This is another tourist line.

The extension of an existing branch is also going forward under the railroad department. This is the Pelequen-Las Cabras branch in O'Higgins Province; with an allotment of $32,000, it is being pushed 5 miles further to Carmen.

Another undertaking of the railroad department is the relocation of the Linares-Colbun branch in Linares Province. At present the 21-mile road is of narrow gage. The project consists of broadening the gage to the 5 ft. 6 in. of the southern State Raiways from which the line runs, and constructing a 14-mile line from Putagan, 7 miles north of Linares, to Colbun. The sum of $129,000 was allotted for continuation of this work in 1947.

The railroad department has also been considering a new branch line from Los Alamos, in the Province of Aranco, 22 miles north to Colico. A budget of $113,000 was to be assigned this project in 1947, but it is not known whether the plan has received final approval.

To further a program of general improvements, the State Railways in October, 1946, obtained authorization for a $5,000,000 credit from the Export-Import Bank of Washington. This money was to be spent in the United States for the purchase of equipment and materials, including Diesel-electric powered trains, motorcars, components for freight and passenger cars, bridge materials, rails, and repair-shop equipment.

Among several betterments outlined by the railroad department for the Chilean State Railways, two are considered of most importance. The first is the elimination of track within the city and the construction of a new sta-

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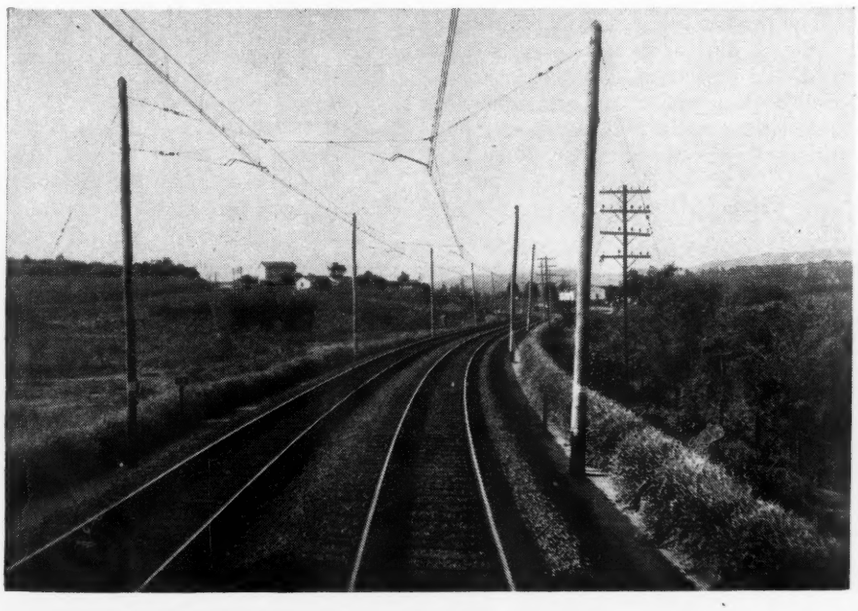

A well-maintained electrified line

Palletized handling methods are used at some points

tion at Coquimbo. This work was to start in 1947 with a budget of $65,000. The other is the transformation of the Yungay station, the first on the route from Santiago to Valparaiso, which was to be allotted $135,000 in order to begin in 1947.

Peru . . .

A project of outstanding importance to both Peru and neighboring Bolivia is construction of a railroad from Matarani to La Joya on the Southern Railway of Peru. Matarani, about 9 miles north of Mollendo, is a new port which was completed in 1941 and is designed to replace Mollendo, as a port of entry for southern Peru and the Bolivian highlands. Matarani's usefulness has been limited, however, by its lack of rail service, whereas Mollendo is the ocean terminal of the Southern Railway.

The need for linking Matarani with the Southern Railway is a pressing one for Bolivia, in view of that land-locked country's dependence on foreign ports which are inadequate for the traffic offered. When reached by the Southern Railway, Matarani, with its modern facilities, promises to solve Bolivia's port problem. The Southern runs to Puno, from which Lake Titicaca steamers operate to Guaqui, a point connected by rail with La Paz.

The Matarani-La Joya link is being built by the Peruvian government. It will be about 39 miles long, and is more than half completed. Rails are laid for approximately 18 miles at the La Joya end, an an additional 4 miles have been cut through the mountainous area between the present railhead and Matarani. Work is progressing slowly, but some authorities expect the railroad to be completed by the end of 1948.

One other railway development in Peru is worthy of mention, namely the Yauricocha extension from the Central Railway. This construction is being carried out by the Cerro de Pasco Copper Corporation to connect the copper mine at Yauricocha with the railroad. An aerial tramway system is also being built between these points. Both the railway and tramway are scheduled for completion early in 1948.

Projects for the future are now being contemplated by the Santa Corporation, a government agency engaged in the development of the hydroelectric resources of the Santa River valley. The corporation is reported to have placed several orders for railway equipment, and it is also planning two major construction projects. One of these is extension of the line from Huallanca terminus to Recuay, an extension first contemplated in the 1920's when the Chimbote Huallanca line was built. The other is a new line along the coast from Chimbote to Trujillo. As far as is known, however, these plans are still in the paper stage, with no financial provisions yet made for their implementation.

Ecuador . . .

Indications are that Ecuador will concentrate, in the immediate future, on only one major railway project in addition to its task of improving service on existing lines.

The project referred to is completion of the Quito-Ibarra-San Lorenzo Railroad. At present the northern terminal of this line, which connects with the Guayaquil & Quito Railroad, is Salinas, just northwest of Ibarra. Construction beyond that point has been going on for some time and is now at various stages of completion along different stretches of the route. The amount assigned in 1947 to this work was about $740,000.

There are several reasons for Ecuador's desire to complete the railway. San Lorenzo is a deep-water harbor about 15 miles from the Pacific Ocean, and, although a channel will first have to be dredged through sand shoals for ocean-going vessels, authorities feel that frequent use and the tides will later keep the channel clear. When the port is built and in operation, the new railroad will give Quito a route to the ocean approximately 47 miles shorter than the line to Guayaquil. In addition to this advantage, the new road will have a maximum grade of 3.5 per cent, as against 5.5 per cent on the Guayaquil & Quito. Furthermore, all traffic originating at or destined for Guayaquil requires transfer over the Guayas river. At San Lorenzo, on the other hand, there will be direct ship-rail transfer. Another consideration is San Lorenzo's location on the ocean. It is about 500 miles closer to the Panama Canal than is Guayaquil. Locally, the railroad will open up a rich agricultural area, hitherto unexploited largely because of a lack of transportation facilities.

Despite all the advantages which a completed Quito-San Lorenzo line may offer, however, some doubt has been expressed as to its success. It is pointed out that ancient Guayaquil, Ecuador's most populous city and its largest commercial center, can hardly be expected to stand idly by while much of its commerce transfers to an embryo port.

Colombia . . .

As in the case of Brazil, Colombia's major railway problem is that of linking its scattered lines into a unified system. North-south transportation facilities are at present built around the Magdalena river, with many highways and railroads acting as feeders. On both sides of the river, land transport consists of railroads connected by highways and supplemented by aerial cableways and primitive animal trails.

The limitations of these facilities are fully appreciated by the Colombian authorities, who are intent upon welding a coherent railroad structure. A long-range plan was embodied in Law No. 26

of 1945, which created a National Railway Fund, outlined a program, and earmarked funds for its execution.

The National Railway Fund was created exclusively for the construction and equipping of the Ibague-Armenia, the Main Occidental, and the Main Oriental Railways. United States experts have estimated that the overall project will require more than 6 years for completion.

The Ibague-Armenia Railway, 85 miles long, will close the only gap now preventing continuous rail service between Bogota and the port of Buenaventura. Construction of this section has been postponed because of the mountainous terrain between the two towns, but it has long been under discussion. A highway links the towns now, and there are many who feel that the new railway is unnecessary. The recent United States Railway Mission to Colombia, for example, pointed out that the Pacific Railway is already unable to handle the import traffic from Buenaventura, and that the new link would merely increase the old line's burden. The mission estimated, also, that the probable traffic would not justify the expenditure necessary to construct and equip the Ibague-Armenia line. Colombian authorities, however, are anxious to build the railroad and the sum of $2,200,000 was made available to the project in 1947. By July about 12 miles had been completed.

The Main Occidental Railway is to extend from Cartagena on the Caribbean to Tumaco, a Pacific port in southernmost Colombia. Parts of this road already exist. The Cartagena-Calamar Railway operates at its northern terminus, and the Narino Railway from Tumaco to Diviso. The Pacific and Antoquia Railways provide service from Anza to Popayan in the center of the proposed route. During 1947, a total of almost $2,500,000 was allotted to the section north of Anza and $1,500,000 to the southward extension from Popayan and the development of the Tumaco port works.

The Oriental line is planned to be a trunk line east of the Magdalena river, and it will provide rail connection between the Caribbean and Bogota. The present railway extends from the capital only as far north as Barbosa. From that point to Bucaramanga, 25 miles away, construction was allotted almost $1,200,000 in 1947. About 11 miles have already been completed. When the entire section is in operation Bogota will be accessible from Puerto Wilches, a Magdalena port connected by rail with Bucaramanga.

The major portion of this project, however, is still to be started. That is the long line from Bucaramanga to the Santa Marta Railway terminal of Fundacion, more than 250 miles away. Additional to these sections is the extension from Neiva, the eastern rail terminal south of Bogota, 73 miles to Garzon. In 1947, the sum of $570,000 was allotted to this portion, but work had not started by September.

Colombia is planning many other railroad improvements. Among these are the construction of central shops, a new freight station, and a new passenger station, all in Bogota. As yet, however, no funds have been made available for these purposes.

Venezuela . . .

Venezuela is the third South American republic seriously concerned with welding its separate railroad lines into a unified system. On January 29, 1946, the government decreed the establishment of a state railways administration (Instituto Anonimo Administracion de los Ferrocarriles del Estado). This new agency was created to administer the four common-carrier railroads owned by the government and to analyze their existing conditions. It is also charged with the responsibility of studying methods to rehabilitate and improve these lines and integrate them into a national network.

In December, 1946, the government appropriated approximately $140,000 to the State Railways Administration for operating, improving, and purchasing additional equipment for the government lines.

The new agency has been going ahead this year with its assigned task. It has entered the market for various items of rolling equipment and repair parts, and it has been working to improve the condition of tracks, repair shops, stations, warehouses, and other buildings. It has also engaged in efforts to expedite movement of freight on the government lines.

It should be pointed, however, that because of various factors the position of the railways in Venezuelan transportation has deteriorated in recent years. Highways have been gaining in importance at the expense of the railroads, which have fallen into a serious state of disrepair. A recent study made by Venezuela's national highways commission indicates that new motor roads, rather than railroads will be constructed in regions where highways appear to be the more desirable medium of transportation, even temporarily. In instances where both a railway and highway are deemed necessary, the latter will probably receive priority.

In view of these considerations, the future of Venezuelan railroads is not promising. The state railways administration is apparently intent on the general rehabilitation of existing lines. Beyond the trackage which may only possibly be built in order to form a unified system, however, it is doubtful that the administration contemplates any new construction.

It is clear that decades will pass before South America will have a railway network to compare with that of the United States or Western Europe, and such a network may never exist. It is equally clear, however, that even slight improvements in existing facilities will assist greatly in the economic growth of the continent. Such improvements are planned and many of them are now being effected. Given a prolonged period of world peace it is reasonable to expect that the railways will reach a point where, in conjunction with new highways and airways, they will truly promote the economic development of South America.

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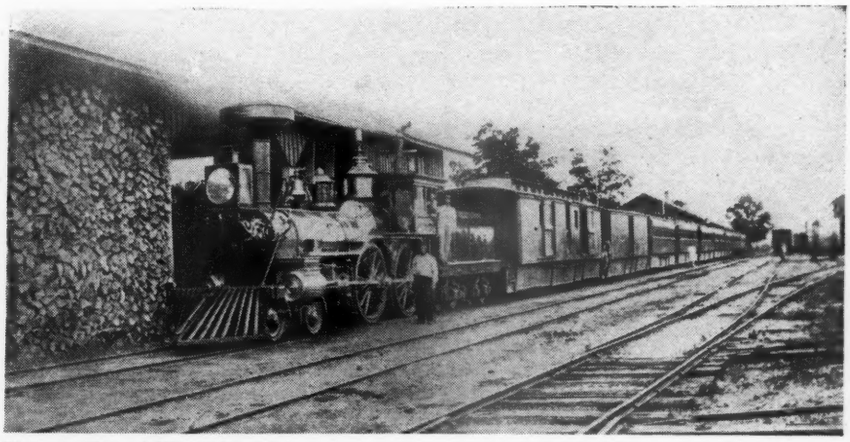


Photo courtesy of W. A. Lucas

The "New Look" on Passenger Cars—1868 Version

These cars of the Michigan Southern & Northern Indiana (now part of the New York Central) were equipped with dust deflectors

COMMUNICATIONS . . .

Insurance at Ticket Windows

HARTFORD 15, CONN.

TO THE EDITOR:

An article in the November 15 issue of *Railway Age,* page 223, reads: "The public is also critical of the sale by ticket sellers of trip travel insurance policies. In busy times, it would be better to have these forms drawn at a 'special transactions' window."

At various times in the past, particularly during the late World War, certain railroads and terminal companies have given consideration to placing the sale of our insurance tickets at "special transactions" windows. However, so far as we know, after considering the pitfalls, the idea in each instance has been given up. This is largely due to the fact that a ticket seller, because of the simplicity of the issuance of our insurance ticket, can write one in practically the time it would take to tell the customer where to purchase a ticket if it were sold at a window other than his own. Another very important factor is that the passenger is getting his "transportation package" at the ticket window. It is felt that, if he is referred to a "special transactions" window for insurance, he would merely let the matter go, rather than get in line at another window—especially if he had been compelled to wait in line at the window where he bought his transportation.

One very interesting feature pertaining to the sale of our insurance tickets is that we have been told by many passenger traffic officers that those ticket sellers who have a large volume of insurance ticket sales also have the largest railroad ticket sales, and, generally, are providing better all-around transportation service. It just seems to tie in that when a fast, courteous ticket seller is giving the passengers good service in the issuance of rail and Pullman tickets, the sale of an insurance ticket properly completes the transaction.

The public has come to expect this service. In fact, they practically demand it, to the extent we are doing the largest premium volume this year in history, and we have been issuing accident insurance tickets since 1864.

WILLIAM F. STOCKDALE
Manager, Railway & Ticket Division, Accident Dept.
The Travelers Insurance Company

NEW BOOK . . .

Colors—What They Can Do for You, by Louis Cheskin, 330 pages, 5½ in. by 8½ in. Bound in cloth. Illustrated. Published by the Liveright Publishing Corporation, 386 Fourth ave., New York. Price, $5.

"Since Newton's discovery of the nature of color nearly three hundred years ago, many books have been written on the physical aspects of color, and there have been some mystical writings on the subject, plus some in connection with art. The psychological aspect of color has generally been neglected; yet it is this aspect that is most important in our daily lives.

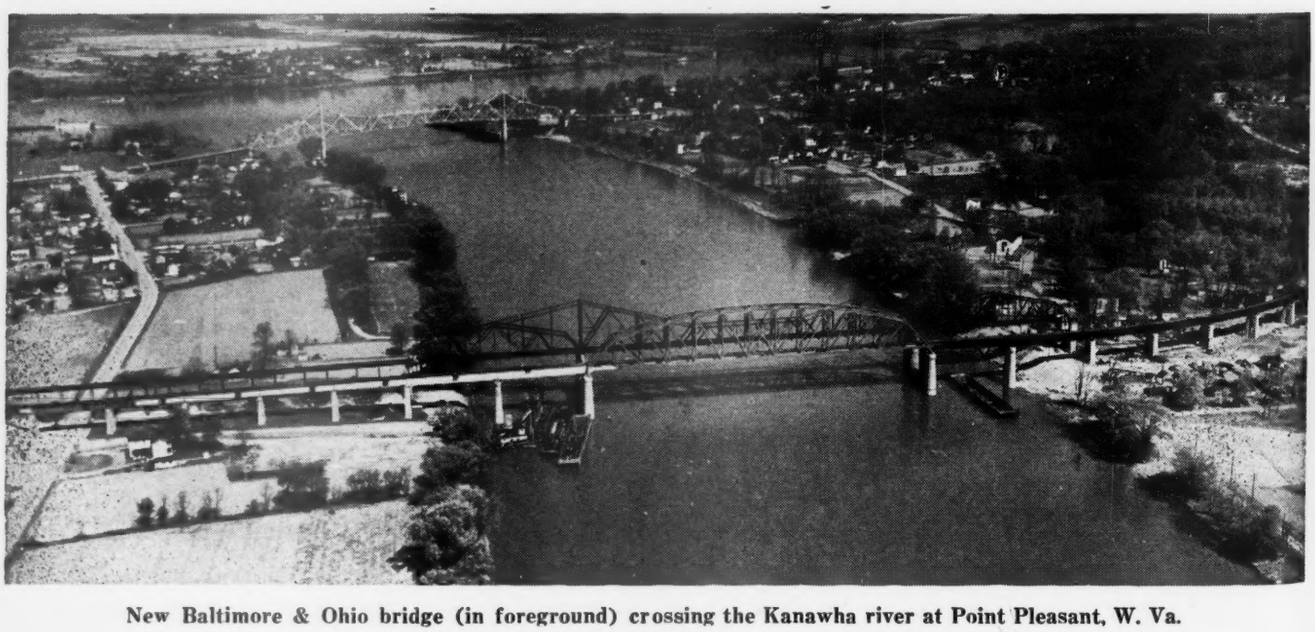
With these comments at the outset of his book on colors, the author not only tells why he set about to write on this subject, but also the theme on which he has written. And on almost every following page he gives complete evidence of his knowledge of the use of color in psychology, art, and design gained from his experience as an artist, as a specialist in advertising and package design, and as associate director of the Color Research Institute of America.

By dealing with the effect of color on man's emotional life the author is able to discuss almost casually the technical aspect of color as the physicist sees it, and write entertainingly on color as seen and used by the chemist, the artist, the physiologist and the psychologist. The average engineer, whose education in color has been somewhat restricted, will appreciate the opportunity here afforded for him to broaden his knowledge and use of this effective medium of expression. He will begin to think not in terms of the three primaries of Newton's seven color spectrum, which Mr. Cheskin believes has "caused great confusion among students of the subject," but of the physiologist's four primary colors in groups of two—red-green and blue-yellow.

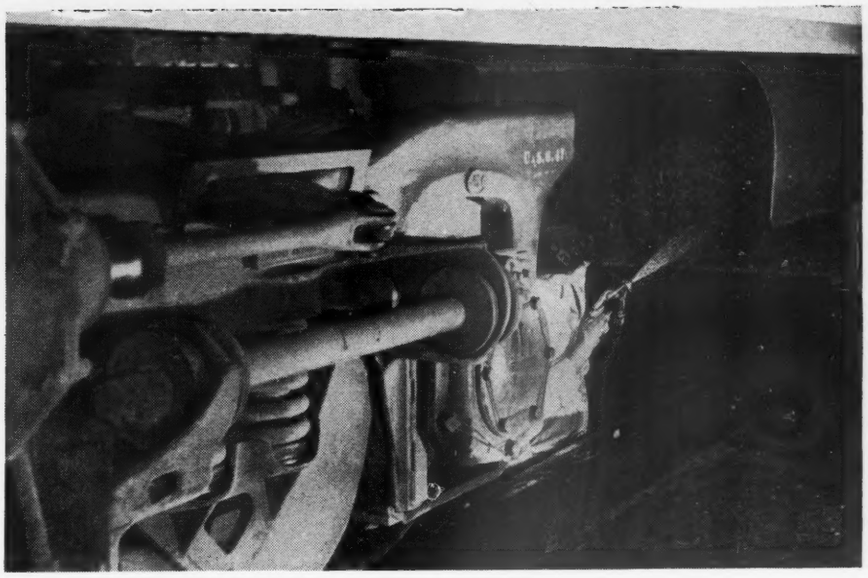
The railway engineer will become accustomed, possibly for the first time, to the "afterimage" of these primaries and better understand how this effect should control his use of color in the design of shops, enginehouses, stations and offices. The author brings out the following facts: (1) That "eye fatigue and complaints of headache can be caused by highly reflecting walls and work benches, by color afterimages," etc.; (2) that "pure, loud colors should be applied to all dangerous machine parts"; (3) that "neutralized colors of the right hue and value must be applied to walls, floors, ceilings, work tables and machines"; (4) that "yellow and black are the best colors where quick attention is essential and where seeing at a distance is a factor"; and (5) that "orange applied to or near hazardous parts of machines impresses the operator." These brief quotations suggest the abundance of useful information the book contains for fact-hungry engineers, designers and average railroaders.

The author has made the contents section a definite contribution to the text. The seven main chapters, which average about 40 pages each, are subdivided into from 6 to 19 sub-sections. In the contents, a several-line synopsis of each section gives at a glance the gist of it, or a significant statement from it. This enhances the value of the book for reference—a necessity in a work of this character, so filled with allied but divergent information.

An appendix defines terms and includes additional material on several subjects covered generally in the text, and describes in detail the meaning of some of the more complex color charts included as illustrations.



New Baltimore & Ohio bridge (in foreground) crossing the Kanawha river at Point Pleasant, W. Va.



The "Empire Builder's" battery housing receiving a protective hide of a tough rubbery coating developed by the Minnesota Mining and Manufacturing Co., as a protection against abrasion and corrosion

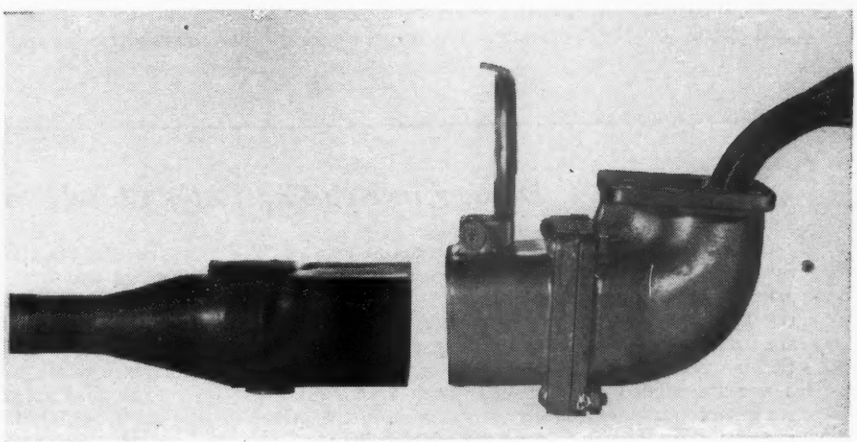
Plastic Undercoating on Passenger Cars

Increased operating efficiency with lower maintenance costs are expected to result from the tough, rubbery coating recently applied to one of the Great Northern's streamline "Empire Builders." The coating was sprayed on underbodies of an entire 12-car train of the new Chicago-to-Seattle streamliner fleet. Special attention was given to spraying adequately the underslung parts such as battery housing and the water tank.

The ⅛-in. thick rubbery skin sprayed on the inside of the skirting and on the bottom of the underframe and attachments is designed to eliminate the resonant hammering of roadbed particles against metal. These parts are protected from the constant gouging and scratching of gravel and cinders sucked up under the train at high speeds.

The coating, when applied to a thickness of ⅛ in. or more, forms a tight seal with no pores deep enough to reach the metal, thus protecting against moisture, against the especially corrosive salt-laden air of seacoast areas, and against brine emptied from refrigerator cars.

The coating is made by the Minnesota Mining & Manufacturing Co., St. Paul 6, Minn.



The plug and receptacle each have 14 contacts and are mounted over the vestibule in the car

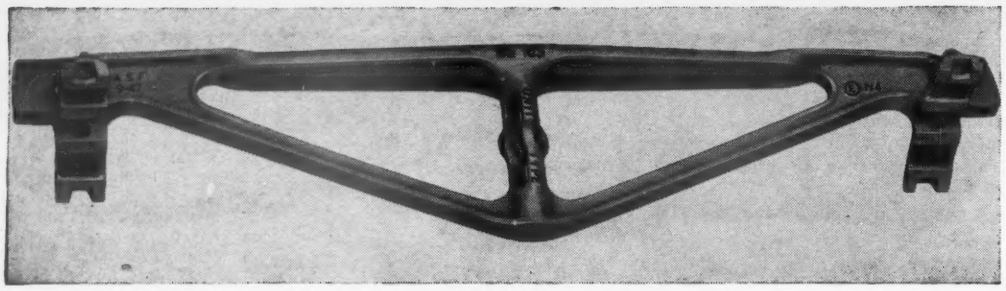
* * *

Rapids-Standard Company's Rapid-Wheel Gravity Conveyer being used to handle l. c. l. freight at Missouri Pacific's Kansas City, Mo., freight house

Communication Circuit Connector

The Mines Equipment Company, Department 13, 4215 Clayton avenue, St. Louis 10, Mo., is producing plugs and receptacles for inter-car communication circuit connections. They are of molded neoprene construction and meet the specifications prepared by the Electrical Section, Mechanical Division, A.A.R.

All conductor-to-contact connections in both plugs and receptacles are soldered at the factory and then firmly embedded in molded rubber, making a waterproof assembly. Contacts and contact joints, being securely held in resilient rubber, effectively withstand train vibration. The rubber jackets are neoprene, which is highly resistant to abrasion, oil or grease and heat or cold. They will not harden or crack in subzero weather.



The American Steel Foundries cast-steel unit brake beam

One Piece Brake Beam

A one-piece cast-steel brake beam for all freight car trucks with unit-type brake-beam guide brackets is a production of the American Steel Foundries, 410 N. Michigan avenue, Chicago 11. The one-piece steel casting includes brake heads, fulcrum, and end supports as integral parts of the permanently rigid truss structure. There is nothing to shake loose, and the alinement of levers and rods is preserved. The control and maintenance of piston travel is furthered by the structural stiffness of this beam.

This brake beam needs no bias fulcrum slot. The load-carrying beam members parallel the rail. Brake-lever force is delivered in line with the plane of the truss. Standard levers can be used both on A.A.R. and long-spring-travel trucks. The end supports and brake heads are set at an angle with the truss so that applied braking force is along a line which is radial from the center of the truck axle to prevent eccentric loading of the truss.

The one-piece construction of this cast-steel unit brake beam permits more efficient metal distribution for greater strength with lighter weight.

The beam weighs 115 lb. Static tests show a deflection of .055 in. under a 20,000-lb. load, and a set of .001 in. at 32,000 lb.

Danger in Relating Rates Closely to Wages

In our December 6 issue, in an editorial entitled "A System That Always Fails," the point was made that price increases quickly follow wage increases in unregulated industry, but not so on the railroads. There are dangers, however, in establishing a mandatory relationship between the level of rates and that of wages. These are pointed out in a letter from a widely known student of transportation economics, who, in the present instance, must remain anonymous. He writes:

"The suggestion that rates and fares be closely correlated with wages worries me. Presumably, the correlation would be through legislation or some administrative device. I know of no reason why material prices should not be considered just as much as wages in such a proposal. That device has been used in public utilities in respect to coal prices. With these two assumptions I can proceed to the reasons why the suggestion worries me.

"In the first place, if price determination is to be nothing more than applying a formula in respect to labor, material and other input factors, it further removes one of the fundamental prerogative of business management. I used the word 'further' because I realize that as far as general rate levels are concerned railroad managements already have to submit their judgment to review by the I.C.C., but they have retained the prerogative of advocating one level or the other in a general increase or of various levels of change for various different things. In other words, as an advocate of free enterprise, I am convinced that management's initiative should be strengthened with respect to responsibility for price decisions rather than weakened. Substituting mechanistic arrangements for arriving at general price levels would do just the opposite.

"The second objection I would have to any mechanical tie between costs and prices rests on a broader view of things. We have one illustration already of such a device in the agricultural area of our economy, namely, the 'price-parity' system. The trouble with such an arrangement is that in times such as the present it becomes, if generally adopted throughout the economy, an almost certain guarantee of runaway inflation. I certainly don't approve of the price-parity system. I think it is evident that we now are in a spiral between wages and farm prices that is aided and abetted by that system. To put a similar arrangement in the transportation system would put further inflationary pressure on the economic structure as a whole.

"The third objection arises from the fact that it is not at all impossible for increases in prices to decrease total revenue. This can be true with certain demand characteristics which I suspect may be coming into effect in the passenger fare situation right now. This whole matter of elasticity of demand is a matter for which railroad executives have a peculiar blank spot, although in ordinary business many are aware of it.

"I might point out further that there is only a remote possibility over any length of time that the correlation between wages and rates may stay the same. For instance, since the war, the lower load factors on the railroads have made unit costs go up faster than just wages. During the war the opposite was true. Technological changes, better managerial control and other items make important differences from time to time. Further, the actual incidence of wage increases may vary rather widely with respect to different types of service. L.c.l. service costs have risen at a more rapid rate in the last few years than the long-haul service costs. No direct correlation of wages and rates in a general way would take this into account. It seems to me that only management is in a position to carry forward adjustments relative to these various factors, although I think they have been very slow to get at it.

"Put in more general terms, it seems to me that government agencies or law cannot be relied upon to do the work of cost-price adjustment with the understanding and success of management. Because things are not going well at the moment due to various things, including the slow and uncertain functioning of already introduced government agencies (the I.C.C.), I am loath to go toward further government control of the situation that is implied in establishing closer correlation."

GENERAL NEWS

Reach Agreement in Rules Case of 2 Ops

Carriers, conductors, trainmen end dispute on all points "across the table"

Complete disposition of the wage and rules issues between the nation's railroads and the Order of Railway Conductors and the Brotherhood of Railroad Trainmen was accomplished on December 18 at Chicago, bringing to a close all negotiations—on a national basis—on wage increases, 44 labor-proposed changes in working rules, and 25 carrier-proposed working rule changes affecting 200,000 conductors, trainmen, yardmasters and dining car employees represented by the two unions. Agreement on the wage increase had been reached on November 14, when the two brotherhoods accepted a 15½-cent hourly pay increase and certain changes in four working rules. At that time also, parties to the dispute agreed to continue negotiations on several labor and carrier-proposed rule changes which could not then be settled.

Employees' Proposals—The final disposition of the employees' proposed rule changes is as follows:

Overtime in Yard Service—Extra Men: Carriers agree to payment for time worked in excess of eight hours in continuous service in a 24-hr. period at time and one-half, with certain exceptions, as when employee is "changing off" from day work to night work, or exercising seniority rights.

Final Terminal Delay: Where a final terminal delay rule is not in effect on a particular road, and conductors or trainmen desire to negotiate such a rule, negotiations will be initiated thereon.

Conversion Rule: On roads where a conversion rule exists to provide the local freight rate of pay on through freight trains after four or more stops have been made, such rule will be changed by reducing by one the number of stops allowed before conversion takes effect. On carriers where such a rule is not now in effect, and conductors or trainmen desire to negotiate such a rule, negotiations will be initiated thereon.

Uniforms: Where an individual carrier requires that uniforms be worn by conductors and trainmen and no agreement with respect to the carrier assuming a reasonable portion of the purchase price of such uniforms exists, and employees desire to negotiate such an agreement, negotiations will be undertaken. Insignia which the carrier requires to be worn shall be furnished free of charge.

Daily Rate, Basic Day, Overtime and Rest Days for Yardmasters: Where rules do not now provide for an 8-hr. day, overtime at time and one-half, daily rate arrived at by multiplying the monthly rate by 12 and dividing by 313, and one rest day per week, and yardmasters desire to negotiate for such provisions, negotiations will be conducted with a view to adopting such of these provisions, or variations thereof, as conditions warrant.

Dining Car Stewards: An agreement was reached wherein certain principles respecting rest periods, basic month, overtime, deadheading, and other details of service, would be incorporated in the existing agreements of individual carriers.

Carriers' Proposals—Final disposition of the carriers' proposed rule changes is as follows:

Yard Starting Time: Exceptions to starting time rules may be agreed upon by the managements and general committees of individual roads to cover local service requirements.

Right to Establish and Abolish Yard Service and Yard Assignments and to Designate and Change Switching Limits: Remanded to individual managements and general committees for negotiation in specific cases.

Time Limit on Claims: Agreement was reached that on roads not now having a rule limiting the original presentation of claims or governing time limits for appeals to carrier officers, negotiations between the individual managements and employees' general committees will be conducted. A paragraph is to become a part of all existing wage schedules stating that the decision of the highest officer designated by the carrier to handle claims shall be final and binding unless appeal thereto is instituted within one year.

Coupling and Uncoupling Air Hose and Releasing Air Brakes Prior to Switching: Withdrawn.

Pay for Time Lost to be Reduced by Other Earnings: Withdrawn.

Interdivisional Runs and Pooling of Cabooses: The two brotherhoods agreed to negotiate with the individual carriers with respect to the establishment of interdivisional or inter-seniority district freight and passenger runs, and to the pooling of cabooses, where such action will result in improved and expedited train service.

Diesel Manufacturers Elect

The Diesel Engine Manufacturers' Association, at its annual meeting in Chicago on December 10, elected the following new officers: President, Gordon Lefebvre, president of the Cooper-Bessemer Corporation; and vice-presidents, Otto H. Fischer, president of the Union Diesel Engine Company, and L. W. Metzger, vice-president of the Baldwin Locomotive Works. Robert H. Morse, Jr., vice-president and general sales manager of Fairbanks, Morse & Co., was re-elected treasurer and Harvey T. Hill was re-appointed executive director.

November Car Output Hailed by Kendall

First 1947 month of "substantial increase in ownership," C. S. D. chairman says

November brought the first "substantial increase" in car ownership that has occurred since last spring, when the accelerated construction program was inaugurated, Chairman Warren C. Kendall of the Car Service Division, Association of American Railroads, reported in his latest monthly review of the "National Transportation Situation." Data presented in the Kendall report show that Class I roads and railroad-owned refrigerator car lines placed 7,998 new cars in service during November, while retirements during that month totaled only 5,102. The net gain was thus 2,896 cars.

The new cars included 925 box cars and 2,093 gondolas and hoppers. The November installations by all railroads and all car lines totaled 8,938 cars, which, Mr. Kendall said, was the highest since April, 1942. He also noted that railroad shops "continue to show substantial production beyond the assigned goal of 1,500 cars per month." Of the 8,938 cars delivered in November, 2,049 were built in railroad shops and 6,889 by contract builders.

Total on Order—The total number of cars on order and undelivered on December 1 was put at 125,395, of which 94,069 will be built by contract builders and 31,326 in railroad shops. The orders of Class I roads and railroad-owned refrigerator car lines account for 110,822 cars, of which 84,891 will be built by contract builders and 25,931 in railroad shops. During the first 11 months of this year, the Class I roads and affiliated reefer lines installed 54,306 new cars, of which 43,024 were built by contract builders and 11,282 in railroad shops.

"Assurances," Mr. Kendall also said, "have been received by Colonel Johnson of O. D. T. of a substantial increase in steel allocations early next year for both new-car construction and railroad repairs and maintenance. The program contemplates that by March production of new cars will exceed 11,000 and by February steel allocations will permit an increase of about 3,000 cars per month in rebuilt cars from railroad shops."

Meanwhile, the C. S. D. chairman had indicated by carloading figures the continuing high level of traffic, and noted that "continued cooperation by shippers and receivers in loading and unloading cars reduced the detention of cars over free time to 14.6 per cent in November, the lowest in 24 months." The October detention figure

(*Continued on page 60*)

Quick Decision Asked in Freight Rate Case

Railroads contend commission should grant increase and make report later

Contending that the shipping public would also welcome the "removal of doubt," the railroads last week urged the Interstate Commerce Commission to issue an "expedited statement of decision" in Ex Parte 166, wherein the carriers are seeking freight rate increases averaging about 30 per cent. The railroads, whose request marked the conclusion in Washington, D. C., on December 20 of six days of oral argument before the commission, asserted at the same time that the regulatory agency should issue its report on the proceeding "at a later date," thereby avoiding an "unnecessary and expensive delay" to the petitioners. As noted in *Railway Age* of December 20, page 61, any permanent increase authorized would supplant the interim advance averaging 8.9 per cent, which became effective October 13.

The railroads' plea was voiced by Jacob Aronson, vice president and general counsel of the New York Central and chief counsel for the petitioners, who, during the course of rebuttal argument, told the commission that "the minimum nature of the railroads' proposal is emphasized when it is realized that their anticipated return of 5.6 per cent on net depreciated investment during 1948 is based on a volume of freight traffic that will be little short of the heaviest in all peacetime history."

Need Conceded—"The need for some increase in railroad freight rates has been openly conceded by practically all parties who have appeared in the present rate case, including governmental agencies and shipper and traffic associations and groups," Mr. Aronson continued in part. "Aside from the ever-present controversy between long-haul shippers and short-haul shippers, the only question is as to the amount of increase."

Mr. Aronson said that the railroads, as the result of the commission's decision, either will continue to be a "marginal" industry, or will be able to take their place alongside other financially strong industries. In this connection, he asserted that even a 5.6 per cent rate of return was far from "lush" in "these lush times."

The carriers' spokesman told the commission that the proposed increases would give the country the caliber of railroads it deserves, adding that the nation now has the opportunity to support such a "deserving rail system." Without sufficient rate advances and subsequent higher net railway operating incomes, he said, it would be impossible for the railroads, because of increased costs, to embark upon expansion programs. "No industry should be required to be held down," Mr. Aronson declared. "It's bad enough for the railroads to have financial and other troubles when business is bad, but why should they have troubles now when business is good?"

Mr. Aronson, noting what he described as the "sobering aspects" of Secretary of State Marshall's December 19 report on the recent Big Four meeting in London, warned that this is not the time to "trifle" with the railroads. The only hope of satisfactory performances by the carriers, he went on, depends upon the regulating arm of government and the management arm of the railroads. The latter, he said, can be counted upon to play its proper role.

Who Inflated First?—Reviewing the oral argument offered by counsel for the intervenors and the briefs submitted in lieu of or supplemental to oral argument, Mr. Aronson recalled that "virtually everyone," including the National Industrial Traffic League, the National Association of Railroad and Utilities Commissioners and the Department of Agriculture, has conceded that the railroads are entitled to further in-

(Continued on page 60)

Treasury Issues Study of Taxes on Transport

Finds fare levy may reduce travel while freight tax hits consumers

With the railroads "again showing deficits on passenger operations," any reduction in traffic resulting from the 15 per cent tax on amounts paid for the transportation of persons would add to the carriers' difficulties, according to a report on "Federal Excise Taxes on Transportation," which has been issued by the Treasury Department's Division of Tax Research. The 3 per cent tax on amounts paid for the transportation of property, the report also said, "appears to have a very repressive effect on consumers," while its competitive effect is "very uneven for business." In the fiscal year ended June 30, 1947, the tax on the transportation of persons yielded $244 million, while the tax on the transportation of property yielded $275.7 million, the report indicated.

The study is one of a series being made in connection with Treasury presentations to congressional committees which are considering revision of the federal tax laws. The purpose of the studies, as the foreword put it, "is to make available data on tax rates, revenue and the economic background of the industry and to discuss the effects of the tax on profits." They "are not intended to make policy recommendations but to provide information and analyses which would be useful in appraising the desirability of changing or eliminating the taxes involved."

Only 15 Per Cent Taxed—As to the tax on transportation of persons, the study says it is doubtful whether the existence of this excise had a significant effect on the profits of the carriers during the war period. At the same time, it suggests that

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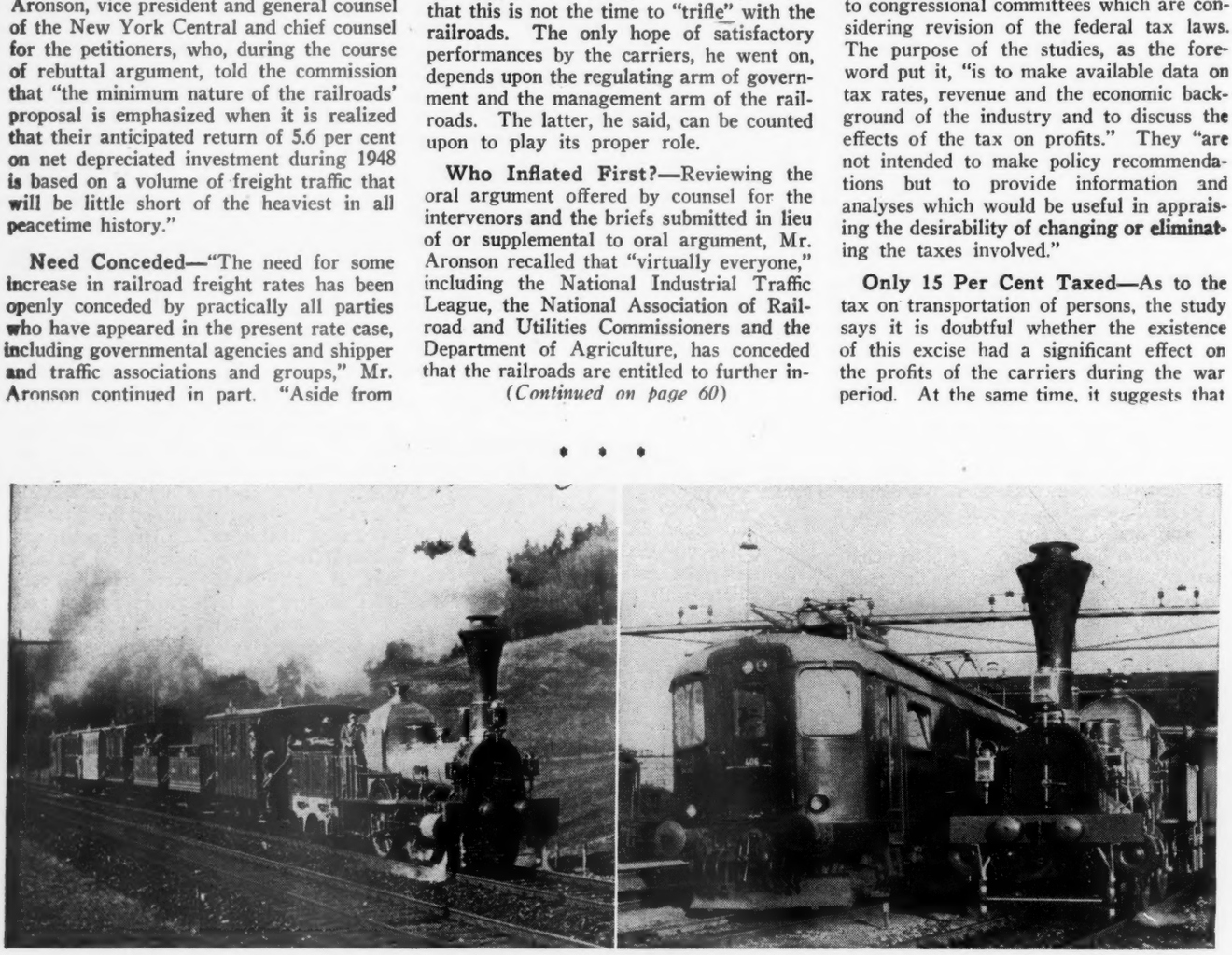


In celebration of its centennial year Switzerland's railroads built a replica (above left) of the first train run over their lines. The train, including the "Limmat" locomotive, toured leading Swiss cities throughout the summer. The first run of the original "Limmat" was from Zurich to Baden in August, 1847. The illustration at the right shows the "Limmat" next to one of the electric locomotives in general use today

"the abnormal wartime experience with the tax does not provide a basis for determining its effect on profits under peacetime conditions." In this connection it is pointed out that prior to the war only about 15 per cent of the inter-city passenger travel was by public transportation facilities; and thus the remaining 85 per cent, representing private automobile travel, went untaxed.

"When the postwar automobile demand becomes satisfied, and other factors affecting demand and supply in the transportation industry have become adjusted to a peacetime basis, it is likely that the present tax would have a significant effect on profits," the study also says. "The increased cost of travel due to the tax probably does not greatly affect business and the most urgent personal travel, but it may materially affect the volume of pleasure travel due to possible substitution of the automobile for other travel means.

"Coach travel on the railroads is particularly sensitive to changes in passenger fares, so the prewar history of railroad rates indicates. Because of large fixed costs, a small decrease in railroad passenger revenue can have an important effect on profits."

After making its reference to present railroad passenger-service deficits, as noted above, the study proceeded to the following comment on bus and air travel: "Bus travel may be somewhat less sensitive to increases in the cost of transportation, and the possible continuation of an upward trend in this form of travel would tend to offset in part reduction in travel caused by the tax. Similarly, the favorable prospects for expansion of demand for air travel would help to offset the effects of the tax on volume of air traffic and profits."

Sees Discrimination—To the extent that there are differences in the use of taxable transportation facilities by different types of business, the tax "discriminates against those types which make the most use of those facilities," the study also says. It finds, too, that the tax "tends to create competitive inequities among the transportation agencies providing different types of service, since it increases price differentials and tends to produce a shift in travel from the higher priced to the lower priced types."

With reference to the effect on consumers, the study suggests that the tax "probably" constitutes a higher proportion of income for the lower than the higher income groups. "The tax on transportation expenditures made by business firms." it adds, "is likely to be reflected in prices paid by consumers in the long run, and thus be distributed regressively in accordance with consumer expenditures."

The general 3 per cent basis of the tax on amounts paid for the transportation of property does not apply in the case of coal where the tax is 4 cents per short ton. Because the transportation industries have operated at or near capacity since this tax was imposed the study expresses doubt that it has had a "significant" effect on carrier profits "up to now." It adds, however, that "under more normal conditions, the tax probably would have some effect on the volume of traffic and profits."

MEDAL CONFERRED ON KIEFER—Paul W. Kiefer (right) chief engineer of motive power and rolling stock of the New York Central, receives the A.S.M.E. Medal from Eugene W. O'Brien, retiring president of the American Society of Mechanical Engineers, at the recent annual meeting at Atlantic City, N. J.

* * *

The latter is then qualified by this statement: "In view, however, of the probable unresponsiveness of the demand for freight transportation to changes in the cost of such transportation, and the relatively low rate of the present tax, it is doubtful whether continuation of the tax would affect profits of the carrier industry very substantially."

Charges Pyramided—The study goes on to say that the tax "tends to increase business costs generally but not uniformly"; and that "since it applies to shipments of raw materials as well as finished goods, there is considerable opportunity for pyramiding . . . as goods flow through the various stages of production and distribution."

Noting again that the rate is "relatively low," the study says that "a large volume of total freight is in the form of raw materials where small differences in cost may determine the source of supply to be used. Transportation costs in 1941 amounted to more than half the value of the products at destination in the case of such heavy commodities as gravel, sand and salt, some fresh fruits and certain forest products."

It is because of the "wide variations in the importance of transportation costs by industries and in the location of different firms selling in the same market" that the study finds the effect of the tax on business "very uneven." It also points out that if there is a significant difference in rates between carriers, the tax will widen the difference in favor of the lower priced services. The indications that the tax has "a very regressive effect on consumers" is based on findings that business will endeavor to pass on such a levy in the form of increased prices.

Burlington Introduces Two Five-Dome "Zephyrs"

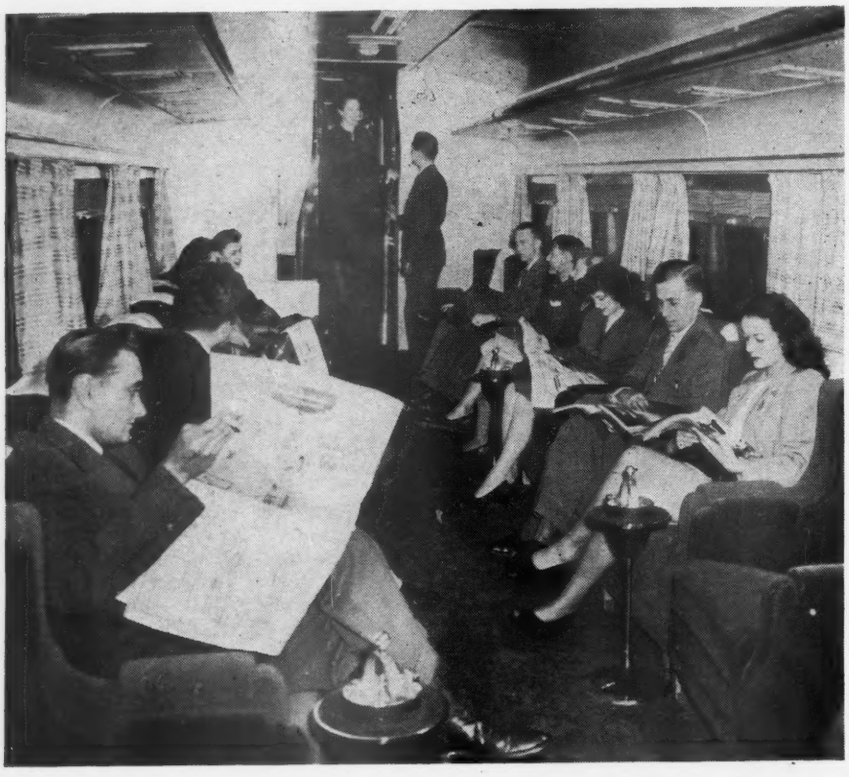
The first trains in the country having a majority of "Vista-Dome" cars in their consists and operating in scheduled revenue service were introduced by the Chicago, Burlington & Quincy in daily service between Chicago and St. Paul, Minn., and Minneapolis, respectively, on December 19. Each of the two "New Twin Cities Zephyrs" comprises four coaches and a parlor-observation car—each of which are Vista-Dome units—and, in addition, a club-lounge car and a diner, which are single-level units.

Included in the short-run, revenue, introductory excursions operated in the new equipment out of Chicago on December 17 was a "style show on wheels" held by the Junior League of Chicago during a 76-mi. round trip between Chicago and Aurora.

In 1945 the Burlington became interested in the concept of the Vista Dome as embodied in models of the "Train of Tomorrow" (then called "Astra-Liner") created by the Electro-Motive Division of General Motors Corporation, and with permission of the latter organization, the road converted a streamline, stainless steel coach into the first Vista-Dome car. In so doing the basic structure—including the floor frame—of the original car was retained.

The first test run of this car was on the "Twin Cities Zephyrs." Others to Colorado, to California and to Texas followed, with the purpose of enabling passengers to try out the Vista-Dome car under a wide variety of scenic and climatic conditions.

The club-lounge car on each of the new "Twin Zephyrs"—a single-level car—accommodates 37 travelers, and is available to both coach and parlor car passengers



Domed parlor-observation car of the new "Twin Zephyrs" provides 31 easy chairs and a private dining room at floor level and 24 seats in the Vista Dome observatory

As a result of these tests, 40 Vista-Dome cars for operation on the Burlington and connecting roads were ordered from the Budd Company. The road also arrived at a mode of operating such cars, the principal features of which are that the seats in the Vista-Dome are not assigned and are considered non-revenue except in periods of extremely heavy travel. Furthermore, the optimum number of seats in the Vista-Dome have been found to be approximately one-half of the number of revenue seats on the floor-level deck. Finally, a refined technique of diplomacy has been devised by porters and trainmen assigned to Vista Dome cars to insure that all passengers have ample opportunity to enjoy the "cab-level view."

Traffic Grows Heavy—The new Vista Dome cars go into service on a route which is historic in the annals of streamliners. The original "Twin Zephyrs" operating between Chicago and St. Paul-Minneapolis were placed in service on April 21, 1935, and were second in the road's streamliner fleet only to the first Diesel-hauled streamliner in the country—the "Pioneer Zephyr"—which was delivered to the road in April, 1934. Prior to the introduction of the fast daytime streamliner service, a daily average of 13 through passengers in each direction were being hauled on the single daytime train between the cities. The original "Twin Zephyrs" were designed to accommodate 88 passengers and performed but one round-trip daily. Since thns did not meet the demand, an additional round-trip was inaugurated less than two months later. Effective December 18, 1936, the road installed the larger "Twin Zephyrs" of six cars each. In September, 1937, a dinette coach was added to each train.

The Vista Dome "Twin Zephyrs" consist of the same number of cars as the previous trains on this run, but accommodate 149 more passengers per train.

Club and Dining Cars—The four dome coaches on each of the new trains were described in detail in a feature article in *Railway Age* of October 11, page 50. The Vista-Dome parlor-observation cars seat 31 persons downstairs and 24 in the dome. The latter is placed over a drawing room which accommodates as many as 5 passengers, adjoining which is a private dressing room and well-appointed men's and women's rest rooms. Each of the coaches has a color scheme of its own. The combinations being: Indian red and orchard grey; soft browns and pastel greens; nut pine, mocha grey and rust; and turtle egg grey and Indian red with accents of blue and rose. Drapes, venetian blinds, upholstery and carpeting in each car blends with the basic color motif. Murals on the bulkheads of each car are symbolic of the territory through which the trains operate.

The club-lounge car at the head end of the new trains is a domeless unit providing accommodations for 37 persons with nooks for foursomes, round tables for two and overstuffed sofa-type lounges with serving tables. Recessed into one end of the car is a smart "snack and sip" bar for the serving of sandwiches and beverages. The club-lounge is being made available to both coach and parlor-car passengers. A 19-ft. 6 in. baggage compartment is included at the forward end of the car.

The remaining 30 domed cars ordered from the Budd Company will go into service on the "California Zephyr" in 1948. A portion of these cars were ordered by the Denver & Rio Grande Western and Western Pacific.

Congress Approves Extension of Transport Powers

President Truman's authority to allocate "the use of transportation equipment and facilities by rail carriers" would be extended until February 28, 1949, under the provisions of Senate Joint Resolution 167 which was adopted by Congress before the sine die adjournment of the recent session on December 19. The authority, which has been delegated by the President to the Office

of Defense Transportation, is now scheduled to expire February 29, 1948.

Final enactment of the resolution requires the President's approval and he had not acted on it when this issue went to press. The resolution, sponsored by Senator Taft, Republican of Ohio, is designed as a "stop gap" measure to deal with domestic price increases and materials shortages while Congress, at the next session, considers the broader program of controls recommended by the President.

In addition to the extension of transport-allocation powers, which was one of the President's recommendations, the resolution authorizes the President to approve voluntary agreements by private industries for the purpose of allocating scarce materials. Participants in such agreements, which won Presidential approval, would be exempt from the anti-trust laws. However, the President could not approve any agreement "which provides for the fixing of prices."

New T. & P. Freight Terminal to Cost $1,500,000

The new freight terminal to be built by the Texas & Pacific in the Trinity industrial district of Dallas, Tex., will cost $1,500,000, it has been announced by W. G. Vollmer, T. & P. president. Construction is scheduled to begin shortly after January 1, 1948, and it is hoped the project will be completed by the end of the year. The new terminal, to be built on a 40-acre tract of land adjoining the road's main-line right-of-way on the west side of Industrial boulevard, will replace the present Gould Building terminal at Pacific and Griffin streets which was constructed 56 years ago by Jay Gould, who then headed the T. & P.

Inbound and outbound loading and unloading platforms will provide a working area of 85,000-sq. ft., compared with the Gould building's 14,000-sq. ft. The first floor of the new building will consist largely of office space with a 31-ft. by 50-ft. auditorium in the front corner. The second floor will be occupied principally by the road's stationery department. Adjoining the freight terminal will be a new motor transport garage for the road's merchandise trucks to replace the present separate garage facility.

The Road to Greater Efficiency

What of the future? Will the railroads be able to hold their own in the postwar competition for the traveler's and the shipper's dollar or will they lapse back into the decline which was so evident before the war?

Of course, no one can answer these questions with certainty but the railroads themselves. And their answer will, to a large extent, depend upon the aggressiveness with which they embrace the opportunities which are open to them. However, having lived on the ambrosia of profitable operation for the past four years, it is apparent that they will not give it up without a struggle.

I belong to the school of thought which believes that there is plenty of room for all forms of transportation. I believe that each one can prosper if it concentrates on developing, to the point of maximum efficiency, that kind of public service which it can perform better than the others. With this approach in mind, the logical field for the airplane is long-distance premium freight and passenger service where speed is the principal consideration. A high percentage of local freight and passenger service has swung to the highway transport industry, while the railroads have the principal claim on the long distance heavy-duty freight business and passenger service where comfort and convenience are prevailing.

Nobody will pretend that the railroad industry has developed the field of long-distance heavy-duty freight service and long-distance comfortable passenger travel to the point of maximum efficiency, least of all the railroads themselves. They know that they are largely equipped with obsolete motive power and worn out rolling stock. They know that they are bedeviled with time- and money-consuming featherbed labor rules and a discriminatory rate structure. They realize that neither their services nor their finances can protect their postwar competitive position without major changes in methods and equipment. Many railroads are already moving aggressively to improve these conditions.

Fortunately, the road to improved efficiency is not hard to find. Already, there are well defined sign posts pointing the way. Many railroads, here and there, have blazed a trail for others to follow. These objectives are clearly indicated:

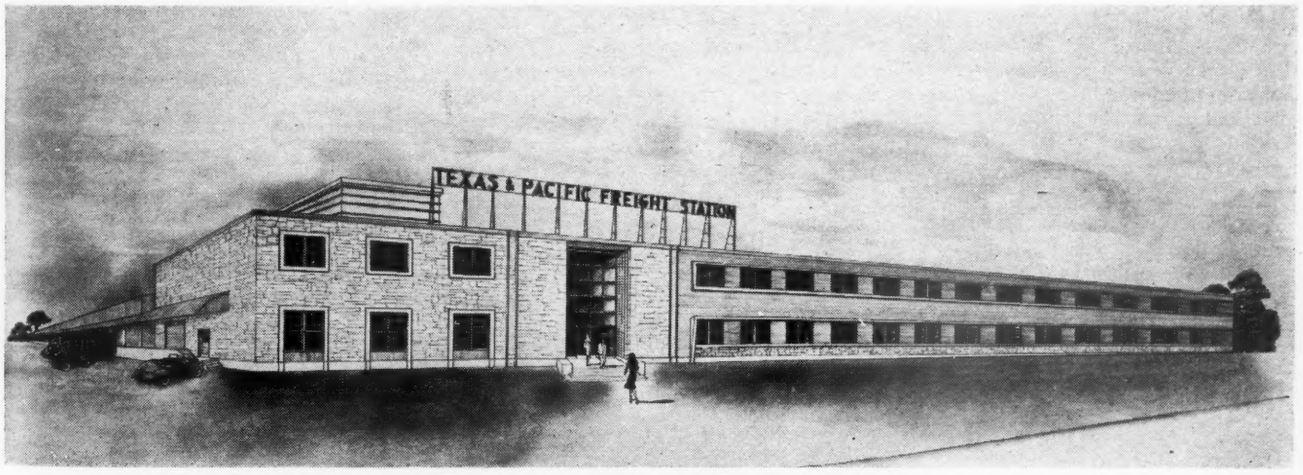
1. Reduce expenses by modernizing plant and equipment.
2. Improve existing services—or eliminate those not needed.
3. Add new services with public appeal.
4. Campaign aggressively for public support in obtaining (a) fair labor contracts, and (b) fair rates.

—From an address to the Kansas City Traffic Club by N. C. Dezendorf, director of sales and service of the Electro-Motive Division of General Motors Corporation.

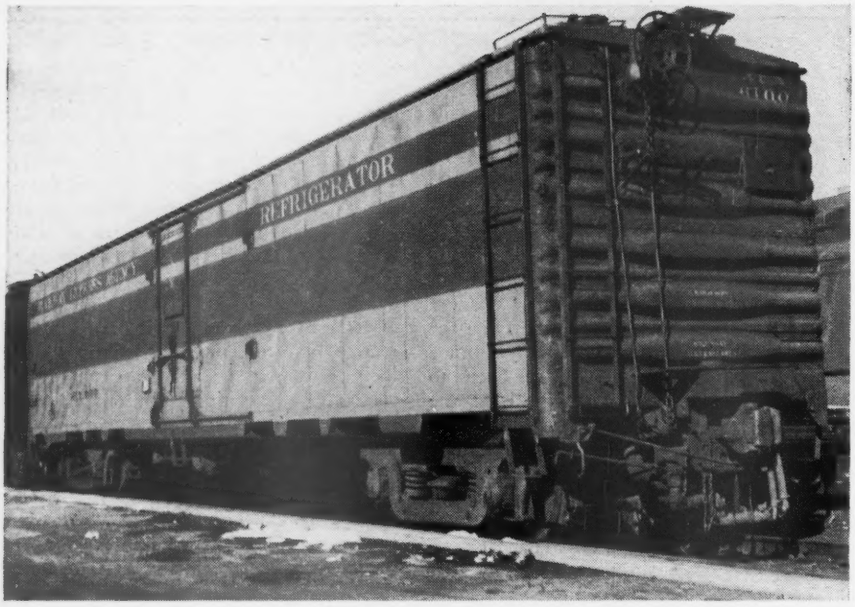
I. C. C. Approves 25 Per Cent Raise in Mail Pay

The Interstate Commerce Commission has approved a temporary increase of 25 per cent in railroad rates for handling mail, effective February 1, 1948, and has ordered retroactive adjustments from that date back to last February 19. The increase granted as a measure of interim relief will remain in effect until the commission passes upon pending railroad applications for a permanent advance of 45 per cent. The railroads had sought an interim increase of 35 per cent.

The commission's decision was embodied in a report dated December 4 but not made public until December 23. The report is in the No. 9200, Railway Mail Pay proceeding, which was reopened for the purpose of considering the railroad petitions. Commissioner Lee dissented and Commissioner



New Texas & Pacific freight terminal to be built next year in Dallas' rapidly developing Trinity industrial district



"REX SILVER REEFER"—Deliveries of 500 new refrigerator cars for use in fast passenger-train service are now being made by the American Car & Foundry Co. to the Railway Express Agency

* * *

Mitchell filed a separate concurring expression, while Chairman Aitchison, "being necessarily absent," did not participate.

The retroactive adjustment will apply back to February 19 with respect to most roads, 204 having been parties to the application filed on that date. Twelve others applied on April 17, the date from which the retroactive adjustment will apply with respect to them. The commission calculated that the 25 per cent increase "will amount to about $32,250,000 per year based on the total mail revenues of $129,000,000 reported by the Class I applicant railroads for 1946 and to about $34,500,000 per year based on the total estimated mail revenue of $138,030,000 for 1947."

The report stipulated that the compensation received under the interim increase "shall be subject to readjustment in accordance with the rates of pay and compensation that may be established by our further order herein." In this connection the report had previously pointed out that the railroads had "expressly consented to abide by a condition . . . that they repay to the Postmaster General, with interest, any portion of the [interim] increase which may later be found by us to be in excess of fair and reasonable compensation for the period or periods covered."

November Car Output Hailed by Kendall

(*Continued from page 55*)

was 15.06 per cent, while that for this year's first 11 months was 16.05 per cent as compared with 17.73 per cent for the same period last year.

Mr. Kendall's usual review of equipment conditions by types of cars said that although the demands for box cars continue heavy there has been "some relaxation in certain sections of the country and it is anticipated that this easement will become general as the holiday season progresses." At the same time, Mr. Kendall warned that the demand for box cars "will be extremely heavy after the first of the year," when the requirements will include a need for equipment to handle "an increased movement of grain which has been held on the farms and which is expected will be released in heavy volume early in 1948." Also, the anticipated 1948 requirements for box cars for other commodities "will place a further strain on the supply and it will be necessary to continue to make every effort to load and unload promptly and to move expeditiously all box-car equipment so as to obtain the fullest possible utilization of every car."

Port Movement — The movement of grain to the ports, Mr. Kendall reported, "has substantially exceeded the quotas established under the government's export grain program." During November, with a program of 33,454,588 bushels allocated, there were actually moved 45,652,997 bushels, or 136.5 per cent of the quotas. Against quotas of 33,500,000 bushels for December, there had been as of December 7, a total of 31,036,295 bushels "lifted or placed in storage at the ports," making the program 87.4 per cent complete the first week of December. Mr. Kendall also calculated that the monthly quota would be exceeded by 5 per cent if the 6,309,016 bushels in transit be added to the number of bushels lifted and at ports. He anticipates "no difficulty" in moving the volume of grain allocated for export during the crop year ending next June 30.

As for device-equipped automobile cars, he reported the supply "tight" on account of the "peak" production of automobiles and a heavier proportion moving by rail. The supply of single and double-deck stock cars was reported "fully adequate to meet all requirements currently." Many roads, Mr. Kendall added, "are augmenting their box-car supply by substituting stock cars for the loading of commodities which can be handled in this type of equipment."

Record Coal Production—His general statement on hopper-car situation noted that coal production "has maintained at record levels during recent weeks," and thus the demands for cars to load coal "have been the heaviest in 20 years and the railroads have not been able to meet all requirements." While the lake-coal program's "minimum requirements have been fulfilled," this is not true of iron ore from the head of the lakes, "which was 2,000,000 tons short when navigation closed on a program calling for 80,000,000 tons." Exports of coal in this year's first 11 months, according to figures in the report, were an "all-time record" of approximately 63,700,000 tons This is more than double 1946's export tonnage.

The C. S. D. chairman anticipated that the use of hopper cars for commodities other than coal will be "somewhat reduced for the next few months now that the winter weather has set in and navigation has been suspended on the Great Lakes." Shipments of ore, he added, "have been largely suspended and this is also true of sand, gravel and other road building construction materials, particularly in the northern sections of the country." He indicated the performance of hopper cars by pointing out that each serviceable car of that type "made 27 round trips during the first 49 weeks of this year."

Mr. Kendall saw a "slight improvement" in the gondola-car situation since his previous report. He added, however, that the supply continues "very tight with shortages reported in some areas." Steel mills on the Eastern-Allegheny areas "have some tonnage piled on the ground awaiting gondolas, particularly those of the longer types." And while the peak of the sugar beet movement in the Central West and Northwest has passed, there "still remains considerable tonnage to be moved from the harvesting to the processing areas."

Requirements for flat cars, as the report put it, "have eased off somewhat but these cars are still in heavy demand in the Central West and Pacific Northwest." As to covered hoppers, there has been "a slight curtailment in bulk cement loading during the past 30 days," making it possible for C. S. D. to transfer a "small number" of such cars to roads which are awaiting delivery of covered hoppers on order. Mr. Kendall predicted that demands will continue heavy enough to require the active use of all available covered hoppers during 1948. Of the refrigerator car supply, he said that generally it has been "satisfactory for the past month."

Quick Decision Asked in Freight Rate Case

(*Continued from page 56*)

creases. At the same time, he said that, while most of the intervenors do not favor the full increases sought by the railroads, the fact that they are aware of the railroads' need for additional revenue is a "legitimate element not to be overlooked." He added that the failure of many industries which would be affected by the increase to be represented at the proceedings

News Department is continued on the next left-hand page.

15 more for the C&O

THE Chesapeake and Ohio has just placed an order for 15 more 2-6-6-6 locomotives with Lima-Hamilton.

These locomotives are of the type that, on dynamometer tests, developed a drawbar pull of 117,500 lbs.—developed an instantaneous drawbar horsepower of 7498 at 46 mph and sustained drawbar horsepowers of 6700 to 6900 at speeds of 42 and 46 mph—accelerated 160 loaded cars (14,083 tons) from dead stop to 19 mph in one mile, and reached 29 mph in 11 minutes.

This is our fifth order from the Chesapeake and Ohio for a total of 60 Class H-8 locomotives—proof in itself of the capable job that they are doing.

LIMA HAMILTON CORPORATION

LIMA, OHIO
Lima Locomotive Works Division
Lima Shovel and Crane Division

LIMA-HAMILTON CORPORATION

HAMILTON, OHIO
Hooven, Owens, Rentschler Co.
Niles Tool Works Co.

also was a strong indication that "silence gives consent."

With respect to charges made by the intervenors that the increased rates would react as a spur toward inflation, Mr. Aronson said that such a "cry" came the loudest from those industries whose "price structure has contributed to the present high cost of living." The Department of Agriculture, he added, also could be included in that category.

The railroads' counsel was particularly critical of that government department's presentation. The latter's counsel, J. K. Knudson, Mr. Aronson said, followed "false gods" in his presentation in that he first recommended an across-the-board increase of 15 per cent, including the interim hike, and then requested exceptions on various commodities, including livestock and grain.

Mr. Aronson also gained an acknowledgment from the bench that the department's presentation contained numerous arithmetical errors with respect to its calculations involving estimated rail traffic volume, net railway operating income and net income. Mr. Aronson declared that although Mr. Knudson was cognizant of such errors, which the former said amounted to "some $300,000,000," he [Mr. Knudson] "started to rationalize" rather than admit to the existence of the errors.

"Fantastic" Estimates—Asserting that the department's presentation was generally "unsound," Mr. Aronson said that, not only was its assumption of potential traffic volume "fantastic," but that its principal witness, L. H. Bean, employed "slide-rule" tactics in arriving at his conclusions. At the same time, Mr. Aronson described as "hopelessly unstable" the assumptions used and conclusions reached by Dr. R. V. Gilbert, former Office of Price Administration economist, who had testified on behalf of the N. A. R. U. C., as reported in *Railway Age* of December 13, page 68, and previous issues.

Mr. Aronson's oral argument was supplemented by a memorandum filed with the commission by the railroads in which the latter contended, among other things, that (1) an inadequate rate level means inadequate earnings, which, in turn, means a high cost of performing transportation, an inferior quality of transportation service and safety standards which fall short of those which could be and should be attained; (2) the perilous situation in which the carriers now find themselves is the inevitable result of an evtraordinary combination of war and postwar conditions; (3) railroad owners—those whose investment makes it possible to provide the public with transportation service—are entitled to fair earnings, or to freedom from governmental restriction which deprives them of the opportunity to obtain fair earnings; and (4) railroad rates and charges, a factor which did not contribute to the general increases in the prices of commodities and the costs of labor, have become completely out of line with railroad costs and also completely out of line with the general price structure prevailing in the economy of the country.

The 100-page memorandum, which noted that, generally speaking, the rates of regulated industries, such as the railroads, are the only ones which have not been adjusted to increased costs, concluded that while the railroads' estimates do not contemplate anything in the nature of a depression or a serious economic recession in 1948, there is "always the possibility. . . .that such disturbance will occur."

Will Prosperity Last?—"This possibility," it continued in part, "cannot be overlooked by prudent and reasonable men. If railroad rates are maintained during a period of high traffic, as they have been for the past two years, on a level which is insufficient to produce reasonable earnings, and a sharp decline in the volume of traffic takes place, the consequences must be disastrous.

"Only two alternatives would be presented. Either freight rates would have to be increased by a huge amount at a time when the economy of the country is least able to stand such an increase, or the railroads would face ruination Both of these alternatives must be guarded against. The only safeguard is to place freight rates on a level which will produce ample earnings during periods of high traffic. This has the effect of softening the blow to the shippers when traffic declines, and of providing funds to tide the railroads over lean years. . . .

"If as a result of mistaken judgment concerning the future, the commission should authorize rates which should prove to be inadequate, the injury to the railroads and to the public interest would, as a practical matter, be irreparable. If, on the other hand, the commission should authorize rates which should prove to be somewhat higher than absolutely necessary, no serious harm could result. A downward adjustment of rates could be made when it seemed desirable without jeopardizing the economy of the country. There is safety on one side and grave danger on the other."

Prior to Mr. Aronson's presentation, the commission heard oral argument from numerous intervenors, principally counsel for shipper protestants. As they had held during the hearings on both the interim and permanent phases of the proceeding, the shippers again contended that approval of the rates sought by the railroads would lead toward a diversion of their traffic to water and motor carrier facilities and a subsequent decline in rail revenues.

Canadian Wage Negotiations Break Down

Negotiations between representatives of 17 Canadian railroad brotherhoods and the Canadian Pacific and Canadian National for a 35-cent hourly wage increase, affecting 140,000 employees, broke off last week when the carriers rejected the union demands.

The Brotherhood of Locomotive Engineers is making a separate demand for a wage boost of 25 per cent, while the Canadian Brotherhood of Railway Employees is asking for a smaller increase. It is probable that the unions will eventually apply to the federal Labor Department at Ottawa for a conciliation board.

Pension Act Amendment

Representative Clason, Republican of Massachusetts, has introduced H.R. 4695 to amend the Railroad Retirement Act "so as to provide full annuities, at compensation of half salary or wages, for persons who have completed 30 years of service."

Freight Car Loadings

Loadings of revenue freight for the week ending December 20 were not available when this issue went to press.

Loadings of revenue freight for the week ended December 13 totaled 854,159 cars, and the summary for that week as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For the Week Ended Saturday, December 13 District	1947	1946	1945
Eastern	160,748	153,948	145,475
Allegheny	176,168	172,455	163,208
Pocahontas	73,774	67,533	60,199
Southern	139,307	140,872	127,580
Northwestern	92,247	90,095	86,989
Central Western	143,597	136,170	125,385
Southwestern	68,318	67,678	62,766
Total Western Districts	304,162	293,943	275,140
Total All Roads	854,159	828,751	771,594
Commodities:			
Grain and grain products	46,596	54,374	54,513
Livestock	15,034	17,768	21,102
Coal	199,070	205,115	180,695
Coke	15,599	11,977	13,228
Forest products	44,316	42,944	33,070
Ore	15,398	12,406	9,974
Merchandise l.c.l.	115,572	123,836	116,672
Miscellaneous	402,574	360,331	342,340
Desember 13	854,159	828,751	771,594
December 6	878,588	729,084	776,376
November 29	792,339	660,911	803,774
November 22	902,672	806,593	716,556
November 15	878,337	917,124	800,534
Cumulative total, 50 weeks	43,071,862	39,877,126	40,724,298

In Canada.—Carloadings for the week ended December 13 totaled 79,191 cars as compared with 81,860 cars for the previous week and 74,373 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
Canada:		
December 13, 1947	79,191	38,794
December 14, 1946	74,373	36,530
Cumulative totals for		
December 13, 1947	3,816,767	1,848,294
December 14, 1946	3,560,127	1,732,092

General News continued on page 70.

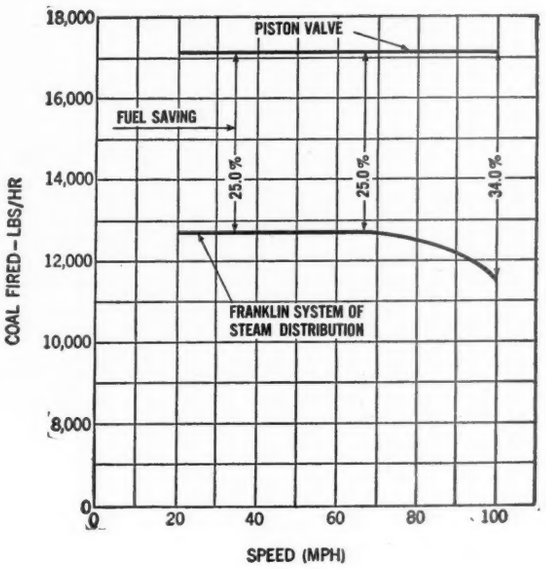
Car Service

Plan Rail Agreements Instead of Car-Movement Order

Railroads are preparing to file with the Interstate Commerce Commission voluntary individual agreements "to effect further improvement in car handling," on the basis of an understanding that if substantially all carriers file such agreements the commission will not make effective Service Order No. 778 which is designed to prescribe railroad operations for car movement. Meanwhile, the effective date of that order has been further postponed from December 20 until January 15, 1948, the postponement coming in Service Order No. 778-C.

News Department is continued on the next left-hand page.

LESS FUEL



This curve shows a comparison of fuel consumption by a modern locomotive when equipped with piston valves and when equipped with the Franklin System of Steam Distribution. In both cases horsepower at rear of tender is the same. It is the drawbar horsepower developed by the piston-valve locomotive with steam consumption of 90,000 lbs. per hour.

Computations based on:

Type 4-8-4

Cylinders 25" x 32"

Driving Wheels 80"

Boiler Pressure 300 lb

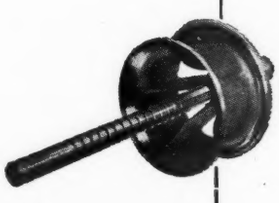
Steam Temperature 730° F

Total Heating Surface 4225 sq ft

Grate Area 100.2 sq ft

used by a locomotive equipped with the Franklin System of Steam Distribution

This curve shows the savings in fuel consumption that may be expected from a modern locomotive when it is equipped with the Franklin System of Steam Distribution.



FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK • CHICAGO • MONTREAL

STEAM DISTRIBUTION SYSTEM • BOOSTER • RADIAL BUFFER • COMPENSATOR AND SNUBBER • POWER REVERSE GEARS
AUTOMATIC FIRE DOORS • DRIVING BOX LUBRICATORS • STEAM GRATE SHAKERS • FLEXIBLE JOINTS • CAR CONNECTION

Originally issued with a November 1 effective date, the order would make each railroad and its operating officers responsible for car service, and fix a general 48-hour limit on stops of freight cars for loading, unloading or repairs (see *Railway Age* of October 18, page 80). Its issuance was followed by conferences between representatives of the commission, the Office of Defense Transportation and the railroads, the result being the proposed voluntary agreement as a substitute. The proposed form of the agreement is as follows:

1. This railroad will assign on each division at least one qualified transportation supervisory official whose principal duty and responsibility shall be to accelerate the movement and handling of freight cars, and to detect delays in the handling of loaded and empty cars. He shall report delayed cars in writing to the division superintendent.

2. This railroad will maintain sufficient and proper records at each station or yard on its line to insure the prompt detection of delayed cars.

3. This railroad will undertake to:

(a) Place or constructively place all inbound loaded cars within twenty-four hours after the first 7:00 a.m. following arrival at destination station or yard, Sundays and holidays excepted.

(b) Remove empty cars after release from load within twenty-four hours after the first 7:00 a.m. following release, Sundays and holidays excepted, unless such cars are appropriated by the shipper for reloading; and

(c) Remove all outbound loaded freight cars within twenty-four hours after the first 7:00 a.m. following tender and acceptance by carrier of the shipping order or bill of lading covering the cars, and forward within twenty-four hours after first 7:00 a.m., following receipt in terminal, Sundays and holidays excepted.

Exceptions: Non-revenue cars in company material service;

Railroad fuel;

Company material, the unloading of which must await preparation of track or bridge structures, requiring special work train service;

Cars released on lines where less than daily service is provided, and efficient transportation would not warrant operation of a train for a few cars only;

Cars released at outlying stations where switching is not performed on Saturdays due to the majority of industries not working, and efficient transportation would not warrant operation of a train for a few cars only;

Privately owned or leased cars held or stored on private tracks when the ownership of the car and the track is the same;

Cars held for export, coastwise or intercoastal shipment;

Cars held for reconsignment;

Cars held for Customs inspection;

Cars held for order notify bill of lading;

Causes beyond the control of this railroad.

4. This railroad will, with due regard for efficient railroad operating practices, hold no more cars for prospective loading at any time for any industry which it serves than those needed to protect current outbound loading, and where one or more other railroads also serve an industry this railroad will arrange to prevent the aggregate holding of empty cars in excess of the industry's current needs.

Exception: Cars assembled for peak or seasonal movements and special types of cars for specific types of loading.

5. Weather conditions permitting, each railroad will repair any car taken out of service for repairs, or carded for repairs, at the earliest time consistent with efficient railroad operating practices.

This undertaking will be filed with the Interstate Commerce Commission and will remain in force as a regulation for car movement until June 30, 1948.

Construction

DETROIT, TOLEDO & IRONTON.—This road has awarded a contract to the Austin Company of Detroit, Mich., for the construction of a Diesel locomotive repair and maintenance shop at Flat Rock, Mich., to cost an estimated $265,000. The necessary trackwork, grading and installation of drainage structures will be performed by the railroad's forces at a cost of approximately $45,000.

SMITHFIELD TERMINAL.—Division 4 of the Interstate Commerce Commission has further extended until April 15, 1948, the time within which this road will be required to complete the construction of certain trackage in the vicinity of Smithfield, Va. The tracks will be used in connection with the operation of car floats on the James River to and from the terminal of the Chesapeake & Ohio at Newport News. The commission previously had extended the time limit from June 15 to December 15.

Equipment and Supplies

LOCOMOTIVES

The ARGENTINE STATE RAILWAYS have ordered 60 single-unit and 35 double-unit Diesel-electric locomotives from General Electric, S. A., at an approximate cost of $18,000,000. Deliveries are scheduled to begin early in 1949 and will continue for a period of 15 months. The locomotives will range in size from 70 to 170 tons and will rate from 800-hp. to 2,000 horsepower.

The TEXAS & PACIFIC has ordered 11 1,000-hp. Diesel-electric switchers from the Electro-Motive Division of General Motors Corporation and one 1,500-hp. switcher from the American Locomotive Company, at a cost of approximately $1,000,000. The 1,000-hp. locomotives will be placed in service at Texarkana, Ark., Shreveport, La., and Longview, Tex. The 1,500-hp. unit is slated for duty at Sweetwater, Tex.

FREIGHT CARS

Freight Car Production Tripled in 1947, Says Felton

Deliveries of freight cars for domestic use averaged 2,717 cars a month during the first quarter of 1947 and the figure for November was 8,938, a three-fold increase, according to a year-end statement by S. M. Felton, president of the American Railway Car Institute. Throughout the year, he added, production increased steadily in proportion to the availability of steel and other materials.

The car builders' program for the first half of 1948 calls for a further increase in freight car production, raising delivery rates as high as the steel situation will permit, Mr. Felton went on. On the basis of the metal now believed to be assured, it is hoped that in the months immediately ahead production will be running at 10,000 cars per month. For any higher rate than that, new planning regarding the rolling of freight-car type steel will be necessary, he said. Estimates of the immediate need have risen sharply. The Harriman Committee goal is production of 14,000 cars monthly. A study by Secretary Krug declared the national need is for 900,000 new freight cars in the next five years. Regardless of what the exact estimate may be, Mr. Felton said, it is clear that the car builders have a big job ahead.

The SPOKANE, PORTLAND & SEATTLE has ordered 500 50-ton steel box cars from the shops of the Northern Pacific and 20 16,000-gal. tank cars from the General American Transportation Corporation. Delivery of both sets of equipment is scheduled for March, 1949.

SIGNALING

The MISSOURI PACIFIC has been granted an extension from January 1, 1948, to January 1, 1949, of the time in which it must comply with an Interstate Commerce Commission order of November 27, 1946, requiring it to install electric switch-locking on all hand-operated switches controlling movements between sidings and main tracks on its lines where trains are operated by signal indication only. As reported in *Railway Age* of December 7, 1946, page 973, the M. P., in reply to a commission show-cause order, agreed to make the required installations. The show-cause order resulted from the commission's investigation of a July 10, 1946, accident on a M. P. line near Washington, Mo. (See issue of September 7, 1946, page 420).

Supply Trade

The **Morrison Railway Supply Corporation** has announced the removal of its offices to 814 Rand building, Buffalo 3, N. Y.

The **Air Reduction Company** has announced the formation of a new wholly-owned subsidiary to be known as the **Air Reduction Pacific Company,** which will carry on all the business formerly conducted by the Air Reduction Sales Company in the western region of the United States. **H. P. Etter,** formerly sales manager of the Pacific coast division, will be president and a director of the new subsidiary, with headquarters at 220 Bush street, San Francisco 4, Cal., and **W. C. Keeley** will serve as chairman of the board.

The merger of the **Robertshaw Thermostat Company,** of Youngwood, Pa., the **Fulton Sylphon Company** of Knoxville, Tenn., and the **Bridgeport Thermostat Company** of Bridgeport, Conn., on September 25, under the name of the **Robertshaw-Fulton Controls Company,** has been announced by **John A. Robertshaw,** president of the new organization.

The **Champion Rivet Company,** Cleveland, Ohio, has announced the appointment of **Frank M. Sweeny** of 4136 Roland avenue, Baltimore, Md., as its Baltimore district sales agent, to handle the sales of rivets and welding electrodes for railroads and industrial users in Baltimore, Washington, D. C., Richmond, Va., and Norfolk. The appointment of **L. Gilbert** as welding electrode sales representative in the New York area, with headquarters at 30 Church street, also was announced.

News Department is continued on the next left-hand page.

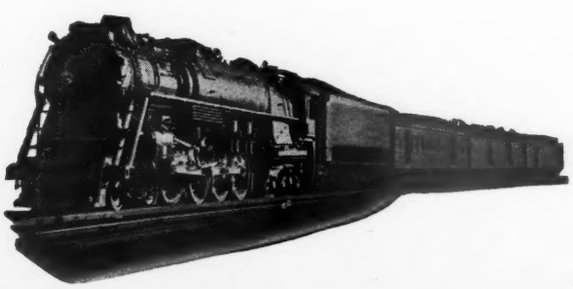
Availability Up

Maintenance Down

The installation of Security Circulators on any type of coal-burning steam locomotive means an increase in availability and a decrease in boiler maintenance.

Compared with other locomotives, those that are circulator-equipped are available for continuous operation for longer periods because they have cleaner flues, longer arch life and improved combustion.

Honeycombing, flue plugging and cinder cutting are definitely reduced, and the installation of Security Circulators permits the use of a 100% arch and prolongs the life of arch brick. Consequently boiler maintenance is substantially reduced.



AMERICAN ARCH COMPANY, INC.

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SECURITY CIRCULATOR DIVISION

Financial

CHICAGO, ROCK ISLAND & PACIFIC.—*New Board of Directors.*—It is understood that a 15-man board of directors for a new company has been agreed upon to assume control of this road shortly after the first of the year when it is expected to emerge from 14 years of court jurisdiction. As noted in *Railway Age* of December 13, page 84, the road's reorganization managers have asked the Interstate Commerce Commission for authority to consummate the approved plan for the reorganization.

The men selected for positions on the new board include the railroad's five reorganization managers, two of its executives and eight business men located at various points on the Rock Island line. They are: Roy C. Ingersoll, president of the Ingersoll Steel and Disc Division of the Borg-Warner Corporation; Edward E. Brown, chairman, First National Bank of Chicago; Mark A. Brown, executive vice-president, Harris Trust & Savings Bank of Chicago; Charles D. Wiman, president, Deere & Co.; William E. Fay, president of the Champion Machinery Company of Joliet, Ill., who with the aforementioned, are reorganization managers; John D. Farrington, at present chief executive officer of the Rock Island; William F. Peter, general counsel of the railroad; L. B. Neumiller, president of the Caterpillar Tractor Company at Peoria, Ill.; Herbert L. Horton, president of the Iowa-Des Moines National Bank & Trust Co., at Des Moines, Iowa; Robert McKinney of Tucumcari, N. Mex.; James Norris, president of the Norris Grain Company, at Chicago; Dudley Swim, engaged in the private investment business at Pebble Beach, Cal.; Frederick M. Mayer, president of the Continental Supply Company, at Dallas, Tex.; Harry Darby, president of the Darby Corporation, steel manufacturer, at Kansas City, Mo.; and Henry Crown, chairman of the Material Service Corporation, at Chicago.

NEW YORK, NEW HAVEN & HARTFORD.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $2,820,000 of equipment trust certificates, the proceeds of which will be applied toward the purchase of equipment estimated to cost $3,760,000, as outlined in *Railway Age* of November 29, page 64. The certificates will be dated November 15 and will mature in 15 annual installments of $188,000, starting November 15, 1948. The report also approves a selling price of 98.20979 with a 2½ per cent interest rate, the bid of Harris, Hall & Co., and associates, which had been accepted subject to commission approval and on which basis the average annual cost will be approximately 2.77 per cent.

SEABOARD AIR LINE.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $7,500,000 of Series C equipment trust certificates, the proceeds of which will be applied toward the purchase of 23 Diesel-electric locomotive units and 1,300 freight cars, as outlined in *Railway Age* of November 29, page 64. The certificates will be dated December 15 and will mature in 15 annual installments of $500,000, starting December 15, 1948. The report also approves a selling price of 99.262 with a 2⅝ per cent interest rate, the bid of Halsey, Stuart & Co., which had been accepted subject to commission approval, and on which basis the average annual cost will be approximately 2.74 per cent.

WESTERN MARYLAND.—*Equipment Trust Certificates.*—Division 4 of the Interstate Commerce Commission has authorized this road to assume liability for $3,000,000 of Series L 1¾ per cent equipment trust certificates, the proceeds of which will be applied toward the purchase of 2 1,500-hp. Diesel-electric switching locomotives and 1,000 55-ton all-steel hopper cars, as outlined in *Railway Age* of December 6, page 78. The certificates will be dated December 1 and will mature in 10 semi-annual installments of $300,000, starting June 1, 1948. The report also approves a selling price of 99.817, the bid of Blair & Co., which had been accepted subject to commission approval, and on which basis the average annual cost will be approximately 1.82 per cent.

Average Prices Stocks and Bonds

	Dec. 23	Last week	Last year
Average price of 20 representative railway stocks..	48.76	47.12	51.83
Average price of 20 representative railway bonds..	85.53	85.06	91.48

Railway Officers

EXECUTIVE

W. M. Smith, whose promotion to vice-president and general manager of the Mississippi Valley department of the Railway Express Agency, with headquarters at St. Louis, Mo., was reported in *Railway Age* of December 13, was born on December 24, 1892, at Murfreesboro, Tenn. He entered the service of the Southern Express Company as a clerk in his home town in 1907, and subsequently held positions with that company and its successors as follows: Agent at Humboldt, Tenn., Evansville, Ind., and Nashville, Tenn.; general agent at Nashville and Miami, Fla.; and superintendent at Jacksonville, Fla., and Atlanta, Ga. Mr. Smith became superintendent of organization and chairman of the Standard Practices Commission, at New York, in 1934, and executive assistant in that city in 1939. He had been located at Houston, Tex., since 1940 as general manager, the position he held at the time of his new appointment.

W. M. Smith

Robert V. White, president of the Lehigh & New England, with headquarters at Philadelphia, Pa., was elected chairman of the board at a special meeting of the stockholders held on December 19. **W. H. Edwards,** executive vice-president and general manager, with headquarters at Bethlehem, Pa., was elected president, effective at once. The principal office of the company will hereafter be at Bethlehem.

H. E. Shumway, general superintendent of transportation of the Union Pacific, has been appointed assistant to the president, a newly created position, with headquarters as before at Omaha, Neb.

FINANCIAL & LEGAL ACCOUNTING

William J. Powell, a lawyer at Preston, Minn., has been appointed general attorney of the Mineapolis & St. Louis, with headquarters at Minneapolis, Minn.

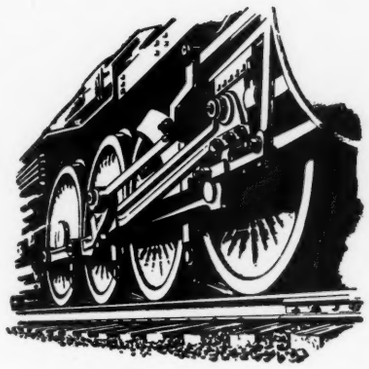
OPERATING

Charles C. Robinson, whose promotion to superintendent of car service of the Chicago, Indianapolis & Louisville, at La-

Charles C. Robinson

Fayette, Ind., was reported in *Railway Age* of December 6, was born on April 26, 1913, at St. Louis, Mo., and received his higher education at Washington University in the latter city and at Yale University. Mr. Robinson first entered railroad service in 1935 as a messenger-clerk in the traffic department of the St. Louis Southwestern at St. Louis. In 1939 he resigned to attend the Graduate School of Yale University as a Strathcoma Fellow in Transportation. He became supervisor of transportation of the Railroad Commission of Kentucky in 1941 and later that same year re-entered the employ of the Cotton Belt as traveling car agent, with headquarters at Tyler, Tex. He became an associate editor of *Railway*

News Department continued on next left-hand page.



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Age at Chicago in 1944, remaining in that position until February 1, 1947, when he joined the Monon as assistant superintendent of car service. Mr. Robinson was advanced to acting superintendent of car service on July 1, and was serving in this capacity at the time of his new appointment.

George R. P. Graham, whose promotion to superintendent of the Canadian National at Port Arthur, Ont., was reported in *Railway Age* of November 15, was born on September 4, 1903, at Schreiber, Ont., and attended public school and the Collegiate Institute at Prince Albert, Sask. Mr. Graham began his railroad career with the C. N. as a bridgeman in

George R. P. Graham

1922, and later served as roadmaster at Edmonton, Alta., and Regina, Sask. He was advanced to assistant superintendent at Dauphin, Man., in 1945, and was transferred to Port Arthur in November of that year. He was holding the position of assistant superintendent at Port Arthur at the time of his recent promotion.

A. D. Hanson, general superintendent of the Union Pacific, with headquarters at Salt Lake City, Utah, has been promoted to general superintendent of transportation, at Omaha, Neb., succeeding **H. E. Shumway,** who has been promoted to assistant to the president. Mr. Hanson is succeeded by **V. W. Smith,** superintendent at Los Angeles, Cal., who in turn is succeeded by **D. F. Wengert,** assistant superintendent at Las Vegas, Nev. **W. B. Groome,** trainmaster at Salt Lake City, succeeds Mr. Wengert at Las Vegas. **G. A. Cunningham,** trainmaster at Las Vegas, has been advanced to assistant superintendent at Pocatello, Idaho.

ENGINEERING & SIGNALING

H. D. Walker, whose promotion to principal assistant engineer of the Illinois Central, at Chicago, was reported in *Railway Age* of December 6, was born on January 18, 1892, at Lakeland, Fla., and received a degree in engineering from the Virginia Military Institute in 1911. The following year he joined the I. C. as a chainman, and subsequently served as a rodman and instrumentman before entering military service in 1917. He returned from army duty in 1919 and rejoined the I. C. to engage in construction work. In 1920, Mr. Walker became assistant engineer in the chief engineer's office at Chicago, remaining in that position until 1931, when he was appointed trainmaster at Carbondale, Ill. He later served as trainmaster successively at Paducah, Ky., and Louis-

H. D. Walker

ville, and in 1944 became special engineer in the office of the vice-president and chief engineer at Chicago. Mr. Walker was holding the latter position at the time of his new appointment.

J. G. Gilley, division engineer of the Chesapeake & Ohio, has been appointed engineer of track, with headquarters as before at Richmond, Va.

Harry Posner, assistant engineer of structures of the New York Central, has been appointed engineer of structures, with headquarters as before at New York. **J. L. Beckel,** special engineer, succeeds Mr. Posner as assistant engineer of structures at New York.

P. T. Simons, assistant engineer of the Missouri Pacific, with headquarters at St. Louis, Mo., has retired.

TRAFFIC

Harry J. Cartier, whose promotion to general freight agent of the Baltimore &

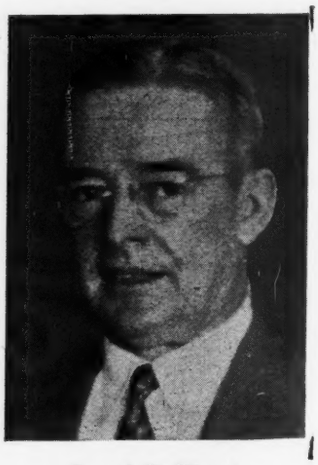
Harry J. Cartier

Ohio at Detroit, Mich., was reported in *Railway Age* of December 6, was born on August 17, 1898, at Bonnots Mill, Mo., and attended grammar and high school in St. Louis, Mo. Mr. Cartier began his railroad career with the B. & O. in 1916, as a stenographer at St. Louis, and later held positions there as rate clerk, chief rate clerk and chief clerk. He was appointed district freight representative at Little Rock, Ark., in 1939, and the following year became district freight agent at St. Louis. He went to Detroit in 1943 as district freight representative, which position he held at the time of his new appointment.

PURCHASES & STORES

Walter C. Glosh, whose appointment as purchasing agent of the New York, Chicago & St. Louis at Cleveland, Ohio, was reported in *Railway Age* of November 22, was born at Cleveland on December 29, 1897. Mr. Glosh entered the service of the Nickel Plate on August 1, 1914, as a stenographer in the stationery store department and, advancing through various positions, he became chief clerk. When the Chesapeake & Ohio absorbed the purchasing department of the Nickel Plate, Mr. Glosh was appointed chief of the agreement bureau of the C. & O., the Nickel Plate and the Pere Marquette. He subsequently became chief of the order bureau, from which position he was appointed purchasing agent of the Nickel Plate.

Joseph P. Blum, whose promotion to general purchasing agent of the Burlington Lines at Chicago, was reported in *Railway Age* of December 6, was born at Chicago, and began his railroad career in the purchasing department of the Burlington in 1910. His entire service has been with that road, except for six months during World War I when he was located at Green Bay, Wis., as purchasing agent for a firm building tugs for the government. Mr. Blum be-



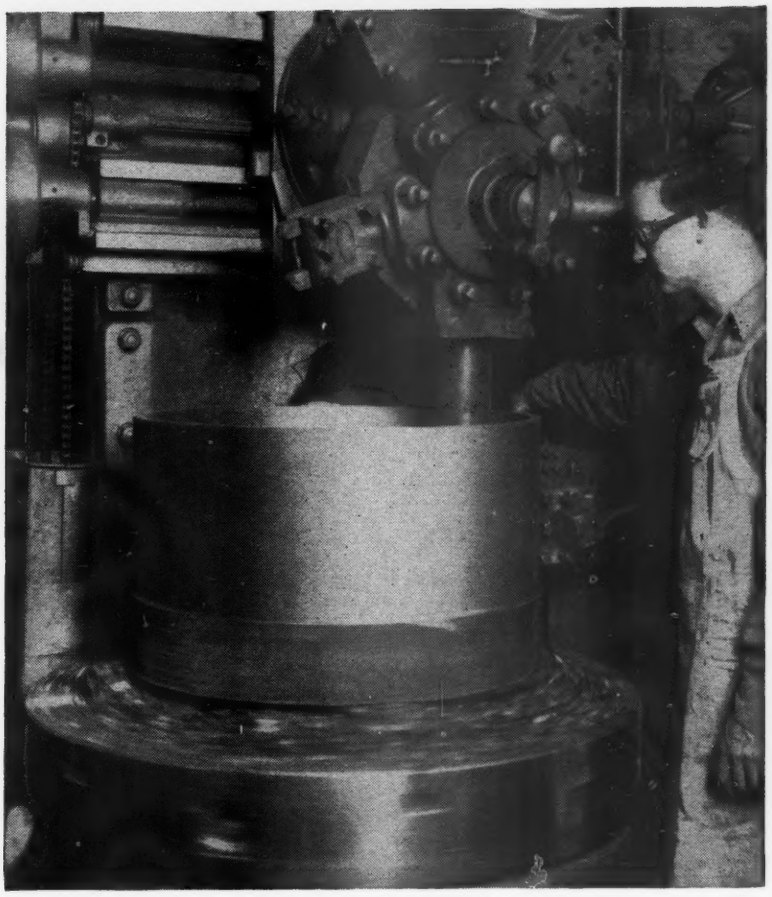
Joseph P. Blum

came assistant purchasing agent of the Burlington in 1931 and remained in that position until April, 1946, when he was appointed purchasing agent. He was serving in the latter capacity at the time of his new appointment.

SPECIAL

J. R. Tucker, general yardmaster of the Norfolk division of the Virginian, with headquarters at Roanoke, Va., has been appointed assistant personnel manager, with headquarters at Norfolk, Va.

HSGI



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Hunt-Spiller are exclusive railroad sales representatives for Double Seal Piston Rings made for Diesel and other services. Double Seal rings are cast from Hunt-Spiller *Air Furnace* Gun Iron.

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Valve Packing Rings	Light Weight Valves	Cylinder Snap Rings
Valve Bull Rings	Cylinder Liners and Pistons for Diesel Service	Valve Rings, All Shapes

GENERAL NEWS

(*Continued from page 62*)

Gen. Heileman Named Assistant Transportation Chief

Brig. Gen. Frank A. Heileman has been appointed assistant chief of transportation (administration), United States Army. Gen. Heileman was born in St. Louis, Mo., on March 13, 1891, and was graduated from the University of Missouri with a degree in mechanical engineering. In the first world war he served with the American Expeditionary Force. He later served with the Corps of Engineers and is a graduate of the Engineer School, the Command and General Staff School and the Army War College. He was made a brigadier general in June, 1943, and a major general in March, 1945.

Launches Probe of Truckers' C.O.D. Arrangements

Division 5 of the Interstate Commerce Commission has instituted an investigation into rules, regulations and practices of motor common carriers of property, governing the handling of C. O. D. shipments and the collection and remittance of C. O. D. funds. The proceeding, docketed as Ex Parte No. MC-42, has been assigned for hearing before Examiner J. J. Williams on January 13, 1948, at Washington, D. C.

The order instituting the investigation stipulated that it will consider "the need for adequate and more uniform tariff provisions relating to C. O. D. service, measures to insure prompt and certain payment of C. O. D. moneys to those entitled to payment, and means to provide adequate carrier records of C. O. D. shipments, collections and disbursements." The order also set out five proposed rules relating to these matters which will be within the scope of the inquiry.

November Employment

Railroad employment decreased 1.32 per cent—from 1,359,066 to 1,341,076—during the one-month period from mid-October to mid-November, and the mid-November total was 2.98 per cent below that of November, 1946, according to the preliminary summary prepared by the Bureau of Transport Economics and Statistics of the Interstate Commerce Commission. The index number, based on the 1935-39 average, was 130.3 for November, as compared with 128.9 for October and 134.3 for November, 1946.

November employment was above that of the previous month in only one category —executives, officials and staff assistants, where the increase was 0.32 per cent. The decreases ranged from .003 per cent in transportation, other than train, engine and yard, to 5.71 per cent in the maintenance of way and structures group.

As compared with November, 1946, the only increase (1.73 per cent) was also in the executives, officials and staff assistants group. Decreases varied from 1.16 per cent in transportation (train and engine service) to 7.18 per cent in transportation, other than train, engine and yard.

More Cars Would Have Slowed Grain Loading, Says Clark

The box car supply during the harvest season—based on the ability of the receivers and handlers of the wheat crop to load and unload—was fully adequate, and additional box cars, instead of handling more grain, would have congested the terminal markets, according to R. E. Clark, manager of the closed car section, Car Service division of the Association of American Railroads. In a report to the transportation and executive committees of the Pacific Northwest Advisory Board on December 12, Mr. Clark also pointed out that during the peak of the harvest the railroads loaded and moved 73,000 cars of grain and grain products in a single week, a rcord not equaled since August, 1929.

Additional facts, among others, brought out in Mr. Clark's report were:

(1) The average turn-around time of each freight car during the first 10 months of 1947 was 13.69 days, or 1.32 days less per car than in the corresponding months of last year.

(2) The present daily freight car shortage is less than one-fourth of that which followed World War I.

(3) The shortage of open top cars is the most acute of any type car and will continue so for some months to come.

F. R. P. Passenger Service Award Due in February

The Federation for Railway Progress will make its first Passenger Service Award at the organization's anniversary dinner to be held next February. The award will be conferred annually upon the railroad which the judges decide has provided the highest standards of passenger service, courtesy and passenger equipment. The judges, headed by A. C. Kalmbach, editor and publisher of Trains magazine, include William N. Leonard of Rutgers University, who represents the "general public" on the federation's executive council, and Robert M. Drysdale, Jr., head of the federation's passenger relations department. Nominations for the first award close on February 1, 1948, and may be made by any member of the traveling public by submitting them to the federation's offices in Cleveland, Ohio.

Representation of Employees

The Order of Railway Conductors of America has retained its right to represent yardmasters employed by the Delaware & Hudson and the Brotherhood of Railroad Trainmen has retained its right to represent road brakemen and yardmen, including foremen and helpers, employed by the Pacific Coast, as the result of recent elections which have been certified by the National Mediation Board. The Railroad Yardmasters of North America was the challenging union in the D. & H. contest,

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Railway Supply Division

while the O. of R. C. had sought to displace the B. of R. T. in the P. C. elections.

The N. M. B. also has certified the Brotherhood of Maintenance of Way Employees, on the basis of a check of representation authorizations, to succeed the United Construction Workers Organizing Committee, Congress of Industrial Organizations, as the representative of Harbor Belt maintenance of way employees.

Lyon Heads Railway Labor's New Political League

Following through to carry out previously-announced plans, members of the Railway Labor Executives' Association have organized "Railway Labor's Political League." The stated objectives of the new organization, which is set up without official connection with R. L. E. A., were reported in the *Railway Age* of November 29, page 59.

At the league's organization meeting, held recently in Washington, D. C., A. E. Lyon, who is executive secretary of R. L. E. A., was elected chairman. The vice-chairmanship went to H. W. Fraser, president of the Order of Railway Conductors and chairman of R. L. E. A.; while H. W. Brown, president of the International Association of Machinists, was elected secretary-treasurer.

October Accident Statistics

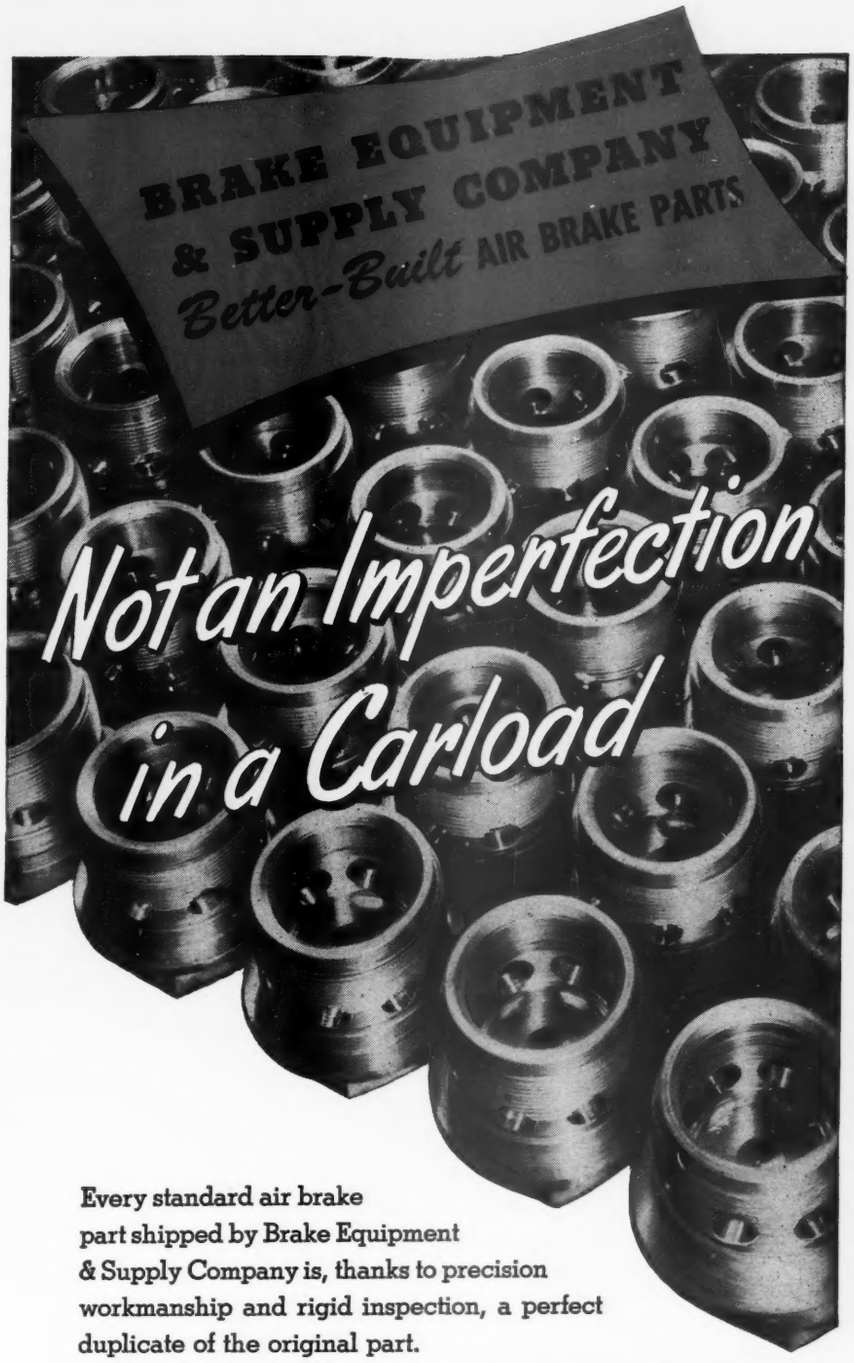
The Interstate Commerce Commission has made public its Bureau of Transport Economics and Statistics, preliminary summary of steam railway accidents for October and this year's first 10 months. The compilation, which is subject to revision, follows:

Item	Month of October		10 months ended with October	
	1947	1946	1947	1946
Number of train accidents*	1,428	1,335	13,898	12,809
Number of casualties in train, train-service and nontrain accidents:				
Trespassers:				
Killed	137	133	1,242	1,297
Injured	110	87	1,022	987
Passengers on trains:				
(a) In train accidents*				
Killed	....	....	33	51
Injured	67	40	1,121	1,264
(b) In train-service accidents				
Killed	2	1	27	34
Injured	224	241	2,391	2,510
Travelers not on trains:				
Killed	6	1	13	14
Injured	88	86	770	859
Employees on duty:				
Killed	52	72	590	551
Injured	2,937	3,231	29,965	31,970
All other nontrespassers:**				
Killed	160	162	1,599	1,610
Injured	502	636	5,272	5,399
Total — All classes of persons:				
Killed	357	369	3,504	3,557
Injured	3,928	4,321	40,541	42,989

* Train accidents (mostly collisions and derailments) are distinguished from train-service accidents by the fact that the former cause damage of more than $150 to railway property.

** Casualties to "Other nontrespassers" happen chiefly at highway grade crossings. Total highway grade-crossing casualties *for all classes of persons, including both trespassers and nontrespassers,* were as follows:

Persons:				
Killed	153	138	1,433	1,460
Injured	323	411	3,215	3,406



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The Mall Rail Drill is one of many attachments for track maintenance that operate from the Mall Rail Grinder—a 6 H.P. Gasoline Engine Power Unit with a wheel barrow mounting for on or off the track use.

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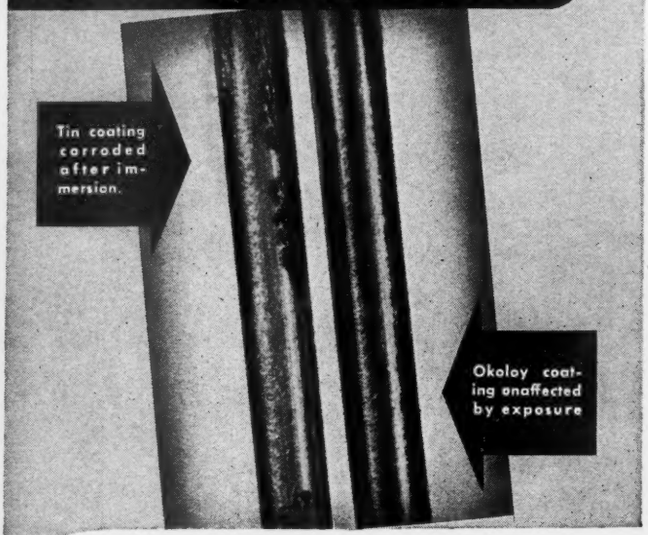

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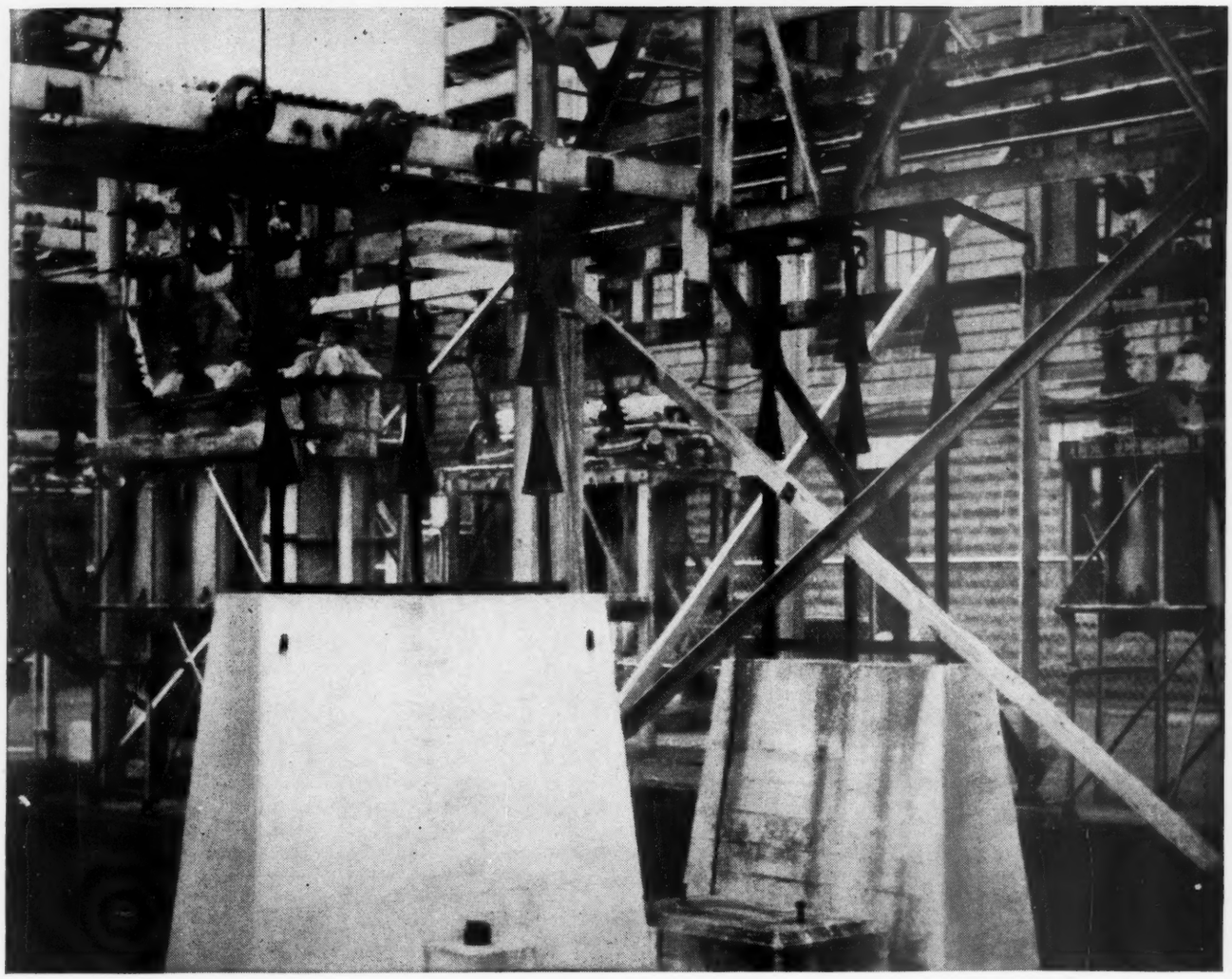

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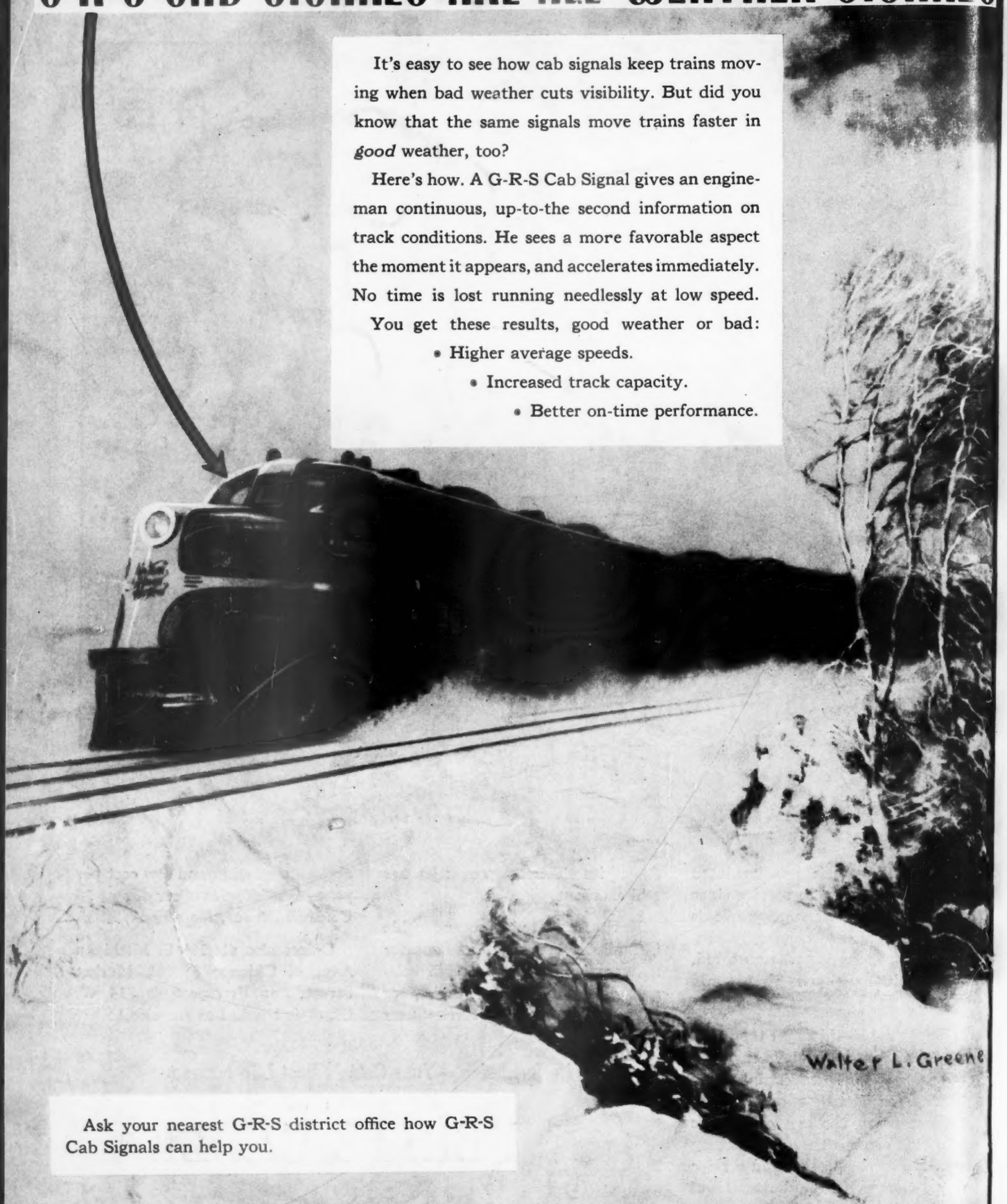

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